OPTIMUM®
MASCHINEN - GERMANY

Operating manual

Version 1.1.2

Magnetic drill

Safety

Technical specification

Commissioning

Operation

Maintenance

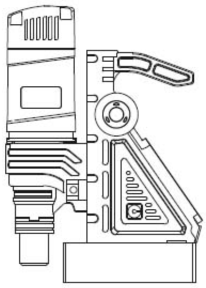
Malfunctions

Appendix

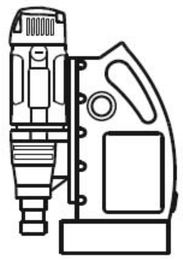
Ersatzteile - Spare parts

OPTi drill®

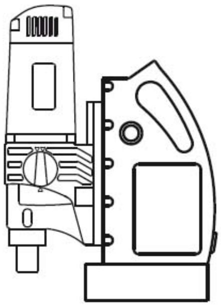
DM35	3071035
DM35V	3071135
DM35PF	3071435
DM36VT	3071236
DM38VF	3071338
DM50	3071050
DM50V	3071150
DM50PM	3071550
DM60V	3071160
DM98V	3071198



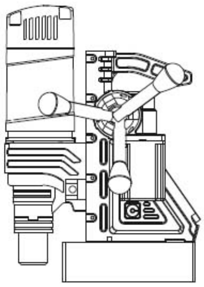
DM35 | DM50 | DM50PM



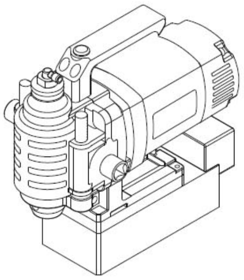
DM35V | DM50V | DM60V | DM98V



DM36VT



DM35PF



DM38VF

Preface

Dear customer,

Thank you very much for purchasing a product made by OPTIMUM.

OPTIMUM metal working machines offer a maximum of quality, technically optimum solutions and convince by an outstanding price performance ratio. Continuous enhancements and product innovations guarantee state-of-the-art products and safety at any time.

Before commissioning the machine please thoroughly read these operating instructions and get familiar with the machine. Please also make sure that all persons operating the machine have read and understood the operating instructions beforehand.
Keep these operating instructions in a safe place nearby the machine.

Information

The operating instructions include indications for safety-relevant and proper installation, operation and maintenance of the machine. The continuous observance of all notes included in this manual guarantee the safety of persons and of the machine.

The manual determines the intended use of the machine and includes all necessary information for its economic operation as well as its long service life.

In the paragraph "Maintenance" all maintenance works and functional tests are described which the operator must perform in regular intervals.

The illustration and information included in the present manual can possibly deviate from the current state of construction of your machine. Being the manufacturer we are continuously seeking for improvements and renewal of the products. Therefore, changes might be performed without prior notice. The illustrations of the machine may be different from the illustrations in these instructions with regard to a few details. However, this does not have any influence on the operability of the machine.
Therefore, no claims may be derived from the indications and descriptions. Changes and errors are reserved !

Your suggestion with regard to these operating instructions are an important contribution to optimising our work which we offer to our customers. For any questions or suggestions for improvement, please do not hesitate to contact our service department.

If you have any further questions after reading these operating instructions and you are not able to solve your problem with a help of these operating instructions, please contact your specialised dealer or directly the company OPTIMUM.

Optimum Maschinen Germany GmbH

Dr. Robert-Pfleger-Str. 26

D-96103 Hallstadt

Fax (+49)0951 / 96555 - 888

Email: info@optimum-maschinen.de

Internet: www.optimum-machines.com

1 Safety

Glossary of symbols

►	provides further instructions
→	calls on you to act
□	listings

This part of the operating instructions

- explains the meaning and use of the warning notes included in these operating instructions,
- defines the intended use of the magnetic drill,
- points out the dangers that might arise for you or others if these instructions are not observed,
- informs you about how to avoid dangers.

In addition to these operation instructions, please observe

- the applicable laws and regulations,
- the statutory provisions for accident prevention,
- the prohibition, warning and mandatory signs as well as the warning notes on the magnetic drill.

Always keep this documentation close to the magnetic drill.

INFORMATION

☎

If you are unable to rectify an issue using these operating instructions, please contact us for advice:

Optimum Maschinen Germany GmbH
Dr. Robert-Pfleger-Str. 26

D-96103 Hallstadt

email: info@optimum-maschinen.de

Machine variants

The variant for you machine is specified on the rating plate.

- OPTIdrill DM35
- OPTIdrill DM35V - with stepless speed.
- OPTIdrill DM35PF - with spindle sleeve feed.
- OPTIdrill DM36VT - with thread-cutting function and stepless speed.
- OPTIdrill DM38VF - In flat design. The flat design is suitable for hard to reach drilling sites with low heights.
- OPTIdrill DM50
- OPTIdrill DM50V - with stepless speed.
- OPTIdrill DM50PM - with permanent magnet.
- OPTIdrill DM60V - with stepless speed.
- OPTIdrill DM98V - with stepless speed.

1.1 Safety instructions (warning notes)

1.1.1 Classification of hazards

We classify the safety warnings into different categories. The table below gives an overview of the classification of symbols (ideogram) and the warning signs for each specific danger and its (possible) consequences.

Symbol	Alarm expression	Definition / consequence
	DANGER!	Impending danger that will cause serious injury or death to people.
	WARNING!	A danger that can cause serious injury or death.
	CAUTION!	A danger or unsafe procedure that can cause personal injury or damage to property.
	ATTENTION!	Situation that could cause damage to the magnetic drill and product, as well as other types of damage. No risk of injury to persons.
	Information	Practical tips and other important or useful information and notes. No dangerous or harmful consequences for people or objects.

1.1.2 Other pictograms

Use by unauthorised persons prohibited!

Use with implants prohibited!

Do not climb onto the machine!

Warning: strong magnet!

Warning: dangerous electrical voltage!

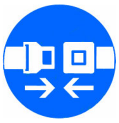
Warning: hot surface!

Warning: danger of slipping!

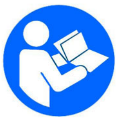
Warning: risk of explosion!

Warning: rotating parts!

Use ear protection!



Use a securing belt!



Read the operating instructions before commissioning!

Only switch when stopped!

Pull out the mains plug!

Wear protective glasses!

Wear protective gloves!

Wear safety shoes!

Magnetisation check!

1.2 Intended use

WARNING!

If the magnetic drill is not used properly
- there is a risk of personal injury,
- the machine and other material property of the operating company will be endangered,

the function of the magnetic drill may be affected.

The magnetic drill is intended to make precise holes in magnetisable materials, such as steel.

The magnetic drill can be used horizontally, vertically and overhead. Ensure that the holding surface is even, at least corresponds to the base of the magnets and that the base is made of magnetisable, clean material that is at least 10mm thick.

Continuous operation of the magnetic drill for more than 2 to 3 hours is not permitted.

The magnetic drill is designed and constructed for use in an environment that is not at risk of explosion, within buildings or protected roofing. The use of the magnetic drill in an open environment is not permitted.

The magnetic drill must only be used by persons who are qualified and familiar with handling it, or are appropriately trained.

If the magnetic drill is used in any way other than described above, modified without authorization of Optimum Maschinen Germany GmbH, then the magnetic drill is being used improperly.

We will not be held liable for any damages resulting from any operation which is not in accordance with the intended use.

We expressly point out that the guarantee will expire, if any constructive, technical or procedural changes are not performed by the company Optimum Maschinen Germany GmbH.

It is also part of the intended use that you
- observe the limits of the magnetic drill,
- observe the operating manual.

1.3 Reasonably foreseeable misuse

Any use other than that specified under "Intended use" or any use beyond that described will be deemed non-intended use and is not permissible. Any other use has to be discussed with the manufacturer. In order to avoid misuse, it is necessary to read and understand the operating instructions before first commissioning. Operators must be qualified.

1.3.1 Avoiding misuse

WARNING!

The use of the magnetic drill in the equipment with electromagnet or permanent magnet in an inclined or vertical position is only permitted if the magnetic drill is secured with the securing belt supplied. If there is a power cut, or too great a load, the magnetic force is not maintained. The magnetic drill may drop and cause accidents.

Magnetic holding force

CAUTION!

Injury due to removal of the connection of the permanent magnet or electromagnet from the substrate. The substrate must be magnetisable. The magnetic force is only present on correctly prepared surfaces.

The adhesion of the magnetic drill to the substrate depends considerably on the thickness of the material, the correctly prepared surface and the material itself. Smooth out any unevenness, such as, for example, welding splatter and remove any lose rust, dirt, grease and liquids.

INFORMATION

Working with stainless steel

Example for stainless steel: Stainless steel 1.4300 (V2A) has an austenitic microstructure and is unmagnetic. Stainless steel 1.4016 has a ferritic microstructure and is magnetisable. The higher the proportion of nickel or manganese in the steel, the greater the magnetic property and the possible holding force of the magnetic drill onto the component.

In the case of non-magnetizable components, a magnetizable component must first be securely attached to the stainless steel.

WARNING!

Injury due to unwanted removal of the magnet from the substrate. Only pull the mains plug of the magnetic drill with electromagnet out of the socket if the magnet has been shut down intentionally.

WARNING!

Do not work with the magnetic drill in environments at risk of explosion, in which combustible liquids, gases or dusts are located. Electrical tools generate sparks which may ignite the dust or vapours.

CAUTION!

When operating for a long time, the electromagnet heats up.

WARNING!

Strong Magnet. Persons with a pacemaker or other medical implants may not use the magnetic drill. Carrying metal parts and watches is prohibited.

CAUTION!

Observe the weight of the magnetic drill and the recommended limits for lifting and carrying loads.

Recommended threshold values when lifting and carrying loads				
	Reasonable load in kg and frequency of lifting and carrying			
	Occasionally		More frequently	
Age in years	Women	Men	Women	Men
15 - 18	15	35	10	20
19 - 45	15	55	10	30
from 45	15	45	10	25

WARNING!

Risk of falling due to sudden vibration from the magnetic drill. When working on scaffolding, the magnetic drill may cause a sudden vibration when starting or if there is a power cut. Secure the magnetic drill with the securing belt supplied.

CAUTION !

Pull the plug from the socket before making adjustments to the magnetic drill or changing any accessories. Many accidents are caused by the drill starting unintentionally.

CAUTION !

Observe the maintenance interval for load attachments from your insurance association. The securing belt supplied with the magnetic drill is a load attachment and must be checked regularly.

1.4 Personal protective equipment

For some works you need personnel protective equipment as protective equipment. These are

- Safety helmet,
- protective glasses or face guard,
- protective gloves,
- safety shoes with steel toe caps,
- ear protection.

Before starting work make sure that the required personnel protective equipment is available at the work place.

CAUTION!

Soiled personal protection equipment that may be contaminated may cause illness.

Clean your personal protective equipment
- after each use,
- regularly once a week.

Personal protective equipment for special works

Protect your face and your eyes: Wear a safety helmet with facial protection when performing work where your face and eyes are exposed to hazards.

Wear protective gloves when handling pieces with sharp edges.

Wear safety shoes when you are transporting the magnetic drill, attaching or removing heavy parts or transporting any parts.

1.5 Safety during operation

WARNING!

Before switching on the magnetic drill, make sure that:

- **there is no risk to persons,**
- **no objects are damaged.**

Avoid any unsafe work methods:

- Make sure that your operation does not create a safety hazard.
- The rules specified in these operating instructions must be observed during assembly, operation, maintenance and repair.
- Do not work on the magnetic drill if your concentration is reduced, for example, because you are taking medication.
- Observe the accident prevention regulations issued by your Employers Liability Insurance Association or other supervisory authorities applicable to your company.
- Inform the supervisor about all hazards or faults.
- Remain by the magnetic drill until it has come to a complete stop.
- Do not let the magnetic drill with electromagnet be unintentionally re-magnetised at the work site.
- Use the prescribed head protection. Ensure you wear close-fitting clothing and, if necessary, a hairnet.

1.6 Electronics

Craftsman or industrial use

Have the machine and/or the electric equipment checked regularly. Immediately eliminate all defects such as loose connections, defective wires, etc.

A second person must be present during work on live components to disconnect the power in the event of an emergency. Disconnect the magnetic drill immediately if there is a malfunction in the power supply!

Comply with the required inspection intervals in accordance with the factory safety directive, operating equipment inspection.

The operator of the machine must ensure that the electrical systems and operating equipment are inspected with regards to their proper condition, namely,

- by a qualified electrician or under the supervision and direction of a qualified electrician, prior to initial commissioning and after modifications or repairs, prior to recommissioning
- and at set intervals.

The deadlines must be set so that arising, foreseeable defects can be detected in a timely manner.

The relevant electro-technical rules must be followed during the inspection.

No check is required before first commissioning, if the manufacturer or installer has confirmed to the operator that the electrical system and operating materials have been procured in accordance with the stipulations of the accident prevention regulations.

1.7 Inspection deadlines

Technical or Industrial Use

Define and document the inspection deadlines for the machine in accordance with § 3 of the Factory Safety Act and perform an operational risk analysis in accordance with § 6 of the Work Safety Act.

2 Technical specification

The following information represents the dimensions and indications of weight and the manufacturer‘s approved machine data for following stated machines.

Bezeichnung	Modell	OPTIdrill DM35	OPTIdrill DM50	OPTIdrill DM35V	OPTIdrill DM50V	OPTIdrill DM60V	OPTIdrill DM98V	OPTIdrill DM38VF	OPTIdrill DM36VT	OPTIdrill DM35PF	OPTIdrill DM50PM
Artikel-Nr.	Item number	3071035	3071050	3071135	3071150	3071160	3071198	30741338	3071236	3071435	3071550
Elektrischer Anschluß	Electrical connection	230V ~1Ph	230V ~1Ph	230V ~1Ph	230V ~1Ph	230V ~1Ph	230V ~1Ph	230V ~1Ph	230V ~1Ph	230V ~1Ph	230V ~1Ph
Motorleistung [W]	Motor power [W]	1600	1700	1550	1700	1890	2180	1650	1550	1600	1700
Max. Bohrer-Ø / Kernbohren [mm]	Core drilling bit Ø max. [mm]	35	50	35	50	60	98	38	36	35	50
Max. Bohrtiefe / Kernbohren [mm]	max. core drilling bit depth [mm]	35	50	35	50	50	75	35	35	35	50
Spiralbohrer maximal	Twist drill bit Ø max.	13	13	13	13	23	28	-	18	-	13
Gewindebohrer maximal	max. thread tapping bit	-	-	-	-	-	-	-	M 15	-	-
Spindelaufnahme	Spindle seat	Weldon 3/4"	Weldon 3/4"	Weldon 3/4"	Weldon 3/4"	Weldon 3/4" / MT 2	Weldon 3/4" / MT 3	Weldon 3/4"	Weldon 3/4" / MT 2	Weldon 3/4"	Weldon 3/4"
Weldon Werkzeugschaft	Weldon tool shaft	Ø 19 mm (3/4”)	Ø 19 mm (3/4”)	Ø 19 mm (3/4”)	Ø 19 mm (3/4”)	Ø 19 mm (3/4”)	Ø 19 mm (3/4”)	Ø 19 mm (3/4”)	Ø 19 mm (3/4”)	Ø 19 mm (3/4”)	Ø 19 mm (3/4”)
Pinolenhub [mm]	Spindle sleeve stroke [mm]	210	220	120	130	220	230	45	220	210	230
Drehzahl unter Last in 1/min	Speed under load in rpm	810	790	120 - 830	100-810	310-550	160-370	640	15-270/520	810	20-280/510
Magnetfuss Abmessungen [mm]	Magnetic foot dimensions [mm]	166x80	166x80	166x80	166x80	202x103	202x103	166x80	166x80	166x80	186x40 / 2pcs
Magnetische Anzugskraft [N]	Magnetic holding force [N]	13800	14500	14800	15600	16000	17000	14500	14200	16000	6500
Abmessung LxBxH [mm]	Dimension min/ max. LxWxH [mm]	370x180x580	370x180x580	250x220x300 250x220x470	250x220x300 250x220x470	330x240x450 330x240x650	330x240x450 330x240x650	350x150x240	250x220x360 250x220x530	350x250x430	340x250x430
Gesamtgewicht Netto	Total weight, net	10.5 kg	10.6 kg	10.8 kg	11 kg	18 .3kg	18.5 kg	8.8 kg	12 kg	14 kg	11.7 kg
Gesamtgewicht Brutto	Total weight, cross	14 .3kg	14.4kg	14.6 kg	14.8 kg	24 .3kg	24.5 kg	12.3 kg	16.8 kg	20.5 kg	18.2kg
Verpackungs-grösse [mm]	Packing size [mm]	580x180x370	580x180x370	580x180x380	580x180x380	610x190x500	610x190x500	420x180x350	580x180x380	340x250x430	340x250x430
Serienmäßig im Zubehör	Standard accessories	-	-	Quick release chuck	Quick release chuck	Quick release chuck	Quick release chuck	-	Quick release chuck	Spindle sleeve feed	-

Noise emission values

The A-evaluated noise level of the magnetic drill at a one metre distance is 66 dB(A) to 69 dB(A). The sound power level is less than 85 dB(A).

This numerical value was measured on a new machine under the operating conditions specified by the manufacturer. The noise behaviour of the machine might change depending on the age and wear of the machine.

Furthermore, the noise emission also depends on production engineering factors, e.g. speed, material and clamping conditions.

INFORMATION

The specified numerical value represents the emission level and does not necessarily a safe working level.

Though there is a dependency between the degree of the noise emission and the degree of the noise disturbance it is not possible to use it reliably to determine if further precaution measures are required or not.

The following factors influence the actual degree of the noise exposure of the operator:

- Characteristics of the working area, e.g. size or damping behaviour,
- other noise sources, e.g. the number of machines,
- other processes taking place in proximity and the period of time, during which the operator is exposed to the noise.

Furthermore, it is possible that the admissible exposure level might be different from country to country due to national regulations.
This information about the noise emission should, however, allow the operator of the machine to more easily evaluate the hazards and risks.

CAUTION!

Depending on the overall noise exposure and the basic threshold values, machine operators must wear appropriate hearing protection.

We generally recommend the use of noise and ear protection.

3 Commissioning

Take the hand levers from the suitcase and fasten it.

Observe the mains voltage. The voltage of the power source must correspond to the specifications on the rating plate of the magnetic drill. Your power source must be equipped with a protective earth connection. Permissible voltage fluctuations in normal operation: + 5% - 5% volts. Permitted frequency fluctuations: ± 1Hz (50/60 Hz).

The magnetic drills have protection class IP42, protected against solid foreign bodies ≥ 1 mm and dripping water hitting at an angle (15° inclination).

Magnetic drills that are equipped with a coolant tank. The coolant tank is fastened to the frame of the magnetic drill with two screws. Only use an oil-water mixture that is available in the specialist trade. Clean the drilling spindle after use, to prevent any associated formation of corrosion.

CAUTION!

The magnetic drills with stepless speed setting

- OPTIdrill DM35V
- OPTIdrill DM36VT
- OPTIdrill DM50V
- OPTIdrill DM60V
- OPTIdrill DM98V

are constructed to standard EN 61000-6-3 Class C2. The operation of this magnetic drill is not provided for use in mixed areas and domestic appliances, in which the power supplied is through a public low voltage supply system. In these areas, it may be difficult to guarantee electromagnetic compatibility due to conducted and emitted interference.

Do not touch both poles of the 230 V plug immediately after unplugging it. The capacitors may still be charged for some time after the mains plug has been removed. Discharging the capacitors in the ambient air takes a certain amount of time depending on the humidity.

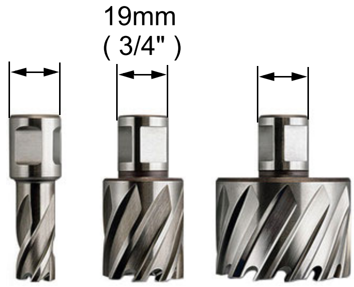
4 Operation

INFORMATION

Magnetic drilling machines with electromagnet are equipped with a sensor that monitors the magnetisability of the workpiece. If the workpiece cannot be magnetised, the drill cannot be switched on.

- Permanent operation of the magnetic drill of more than 2 to 3 hours is not permitted. There is a risk of fire due to high load. The magnetic drill first has to be cooled down before it starts to be run continuously again.
- Motor cooling by the fan in the motor is correspondingly low at low speed. Pay attention to this criterion especially for machines with stepless speed adjustment under high load and low speed setting at the same time to prevent overheating.
- If the drill bit jams, the magnetic drill must be shut down immediately.
- Operation of the magnetic drill in an open environment is not permitted.
- For magnetic drills with automatic feed, when starting work, the lowest speed and the lowest feed must be selected first.
- Drilling into non-magnetisable surfaces is only possible if a steel plate of a sufficient size has been fastened to the non-magnetisable surface.
- First switch on the electromagnetic and then the drilling spindle. When switching off, first switch off the drilling spindle and then the electromagnet.
- For drilling work in a vertical position overhead, two people must be present.
- The securing belt must also be used when working with horizontal drilling work, to secure the magnetic drill against falling from the elevated working locations.
- The manually-operated drill feed should not exceed 0.05 mm per rotation.
- Only use a suitable core hole drill for the machining task envisaged.

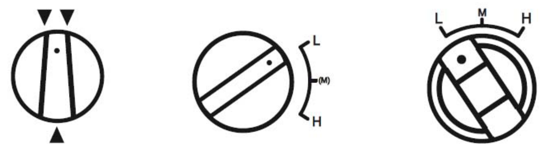
Usable tools: Weldon type; Clamping of tools with 19mm cylindrical shank and lateral driving surface similar to DIN 1835-B and DIN 6535-HB.



On magnetic drills with additional gear shift:

Only switch at standstill. If necessary, start the spindle for a short time and switch it off again.

Gear stage



Low gear speed: ▼▼ for hard materials, large drills, cutting tools, screw taps.

High gear speed: ▲ for soft materials, small drills, small cutting tools.

OPTIdrill DM36VT

Switching to left-hand rotation is done by additionally pressing the yellow pushbutton. The magnetic drill stops and changes the direction of rotation after about 3 to 5 seconds. Keep the push button pressed to maintain the changed direction of rotation.

OPTIdrill DM35PF

Pull out the quill lever to activate the automatic feed. To deactivate the feed, push the quill lever back in. By reactivating the feed, a return in the feed with reversal of the direction of rotation takes place.

WARNING!

Spurting and overrun of coolants and lubricants. Ensure that the cutting fluids are removed immediately after you have finished working. Close the stopcock of the coolant tank again.

On magnetic drilling machines with coolant ring, the stop must be mounted to prevent rotation.

4.1 Fitting of the tool in the holder

4.1.1 Standard

Insert tool and firmly clamp with side screw.

4.1.2 Quick change

Push sleeve upwards and insert tool. Release the sleeve and check for secure attachment.

Standard

Quick change

4.2 Placing the magnetic drill on the workpiece

INFORMATION

A sensor controls the possible magnetic holding force. With insufficient magnetic holding force on the component, the magnetic drill can not be turned on.

To permit the magnetic drill to adhere properly to material that is to be drilled, the surface must be clean and smooth. Loose rust, dirt or grease must be removed before mounting the magnetic drill; any welding beads or surface irregularities must be smoothened. Thin coats of paint will not impair adhesion. Clean the magnet block as well if necessary. After switching the magnet on, shake the magnetic drill firmly to ensure that the magnetic drill is adhering properly. If it is not, then check the condition of the surface of the material and that of the bottom of the magnet block.

Please also observe ► Working with stainless steel on page 6

4.2.1 Use on thin steel

The magnetic drill adheres best to low-carbon steel that is at least 12 mm thick. For drilling a hole into thin steel, a 12mm steel plate can be secured under the material at the place where the magnetic stand is to be positioned.

4.2.2 Non-ferrous metals

To drill a hole in non-ferrous metal, the steel plate should be secured on the surface of the material and the magnetic drill stand then placed on the steel plate.

4.2.3 Round or cambered surfaces

If you need to drill into a round or cambered surface, then the magnet block should be positioned with its longitudinal axis parallel to the axis of the camber. The open space between the magnet block and the camber should be packed with steel wedges on both sides along the entire length of the magnet block so that after switching on the magnet as many as possible magnetic lines of force are conducted from the magnet pole through the wedges and the material to the magnet block housing.

Ensure that the steel wedges on both sides of the magnet block are distributed such that the axis of the drill bit is aligned directly to the centre of curvature; otherwise it could be diverted to one side. By shaking the magnetic drill, make sure that the stand adheres properly to the material.

5 Maintenance

- Always keep the drill stand and magnetic base clean, to be able to work well and securely.

CAUTION!

If the replacement of the connecting line is required, then this must be done by an electrician, to avoid any safety risks.

CAUTION!

Check the surface of the magnetic base for damage and replace if necessary. Damaged magnetic surfaces reduce the holding force and cause the magnetic drill to move away from the surface with the maximum possible torque of the drilling spindle.

- After an operating time of approximately 90 days, the carbon brushes of the drive motor should be replaced.
- Gears running in the oil bath are maintenance-free. It is not necessary to replace the oil.

6 Malfunctions

Malfunction	Cause/ Possible Effects	Solution
Magnetic base not functioning	• Switch contact faulty. • The power supply is faulty, plug is loose. • Overload, the fuse has blown. • Short circuit in the electromagnet or faulty electromagnet. • Magnetisability of the substrate too low. • Conductor plate faulty.	• Replace the switch. • Replace the cable and plug. • Replace the fuse. Replace or repair the electromagnet. • Check the thickness and material properties of the substrate. • Replace the conductor plate
Drilling spindle does not switch on.	• Electromagnet is not switched on. • The sensor detects too little magnetic holding force on the component. • Switch contact faulty. • Bad contact of the carbon brush. • Faulty rotor or stator winding.	• Before switching on the drilling spindle, first switch on the electromagnet. • ► Magnetic holding force on page 6 • Replace the switch. • Replace the carbon brushes of the electric motor. • Completely replace the drilling head.

Malfunction	Cause/ Possible Effects	Solution
Problems on the drive motor	• The spark colour on the electric motor is orange. • Sparks are flying out. • Sparks are flying in a ring from fire.	• Reduce the drilling feed. • Please replace the carbon brushes. • Check whether the rotor or stator winding is faulty. Motor burnt out.
Drill or core hole drill "burnt up"	• Feed too fast. • Chips are not coming out of the drilled hole. • Drill blunt. • No or too little cooling.	• Reduce feed. • Extract drill more often during work. • Sharpen drill bit/ use a new drill bit. • Use cooling agent
Drill tip is running off centre, the drilled hole is non-round	• Hard points on the workpiece • Length of the cutting spirals/or angles on the tool are unequal • Drill deformed	• Use new drill
The drill chuck or the taper mandrel cannot be inserted.	• Dirt, grease or oil on the taper inside of the drill chuck or on the taper surface of the drill spindle • Positioning the follower in the drill spindle is not considered	• Clean surfaces well • Keep surfaces free of grease
Drilling feed does not operate	• Feather key sheared from the shaft. • Transmission for manual feed worn.	• Replace key. • Replace transmission.

7 Appendix

7.1 Copyright

This document is protected by copyright. All derived rights are reserved, especially those of translation, re-printing, use of figures, broadcast, reproduction by photo-mechanical or similar means and recording in data processing systems, either partial or total.

Subject to technical changes without notice.

7.2 Liability claims/warranty

Besides the legal liability claims for defects of the customer towards the seller, the manufacturer of the product, OPTIMUM GmbH, Robert-Pfleger-Straße 26, D-96103 Hallstadt, does not grant any further warranties unless they are listed below or were promised as part of a single contractual provision.

- ☐ Liability or warranty claims are processed at OPTIMUM GmbH's discretion either directly or through one of its dealers.
  Any defective products or components of such products will either be repaired or replaced by components which are free from defects. Ownership of replaced products or components is transferred to OPTIMUM Maschinen Germany GmbH.
- ☐ The automatically generated original proof of purchase which shows the date of purchase, the type of machine and the serial number, if applicable, is the precondition in order to assert liability or warranty claims. If the original proof of purchase is not presented, we are not able to perform any services.
- ☐ Defects resulting from the following circumstances are excluded from liability and warranty claims:
  - Using the product beyond the technical options and proper use, in particular due to overstraining of the machine.
  - Any defects arising by one's own fault due to faulty operations or if the operating manual

  is disregarded.
  - Inattentive or incorrect handling and use of improper equipment
  - Unauthorized modifications and repairs
  - Insufficient installation and safeguarding of the machine
  - Disregarding the installation requirements and conditions of use
  - atmospheric discharges, overvoltage and lightning strokes as well as chemical influences
- Neither are the following items covered by liability or warranty claims:
  - Wearing parts and components which are subject to normal and intended wear, such as V-belts, ball bearings, lighting, filters, seals, etc.
  - Non reproducible software errors
- Any services, which OPTIMUM GmbH or one of its agents performs in order to fulfil any additional warranty are neither an acceptance of the defects nor an acceptance of its obligation to compensate. These services neither delay nor interrupt the warranty period.
- The court of jurisdiction for legal disputes between businessmen is Bamberg.
- If any of the aforementioned agreements is totally or partially inoperative and/or invalid, a provision which nearest approaches the intent of the guarantor and remains within the framework of the limits of liability and warranty which are specified by this contract is deemed agreed.

7.2.1 Decommissioning

CAUTION!

Used devices need to be decommissioned in a professional way in order to avoid later misuses and endangerment of the environment or persons.

- **Unplug the power cord and cut the connection cable.**
- **Disassemble the machine if required into easy-to-handle and reusable assemblies and component parts.**
- **Dispose of machine components and operating fluids using the intended disposal methods.**

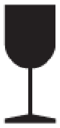
7.3 Storage

ATTENTION!

Incorrect and improper storage might result in damage or destruction of electrical and mechanical machine components.

Follow the instructions and information on the transport box.

- Fragile goods (Goods require careful handling)



- Protect against moisture and humid environment

- Prescribed position of the packing case (Marking of the top surface - arrows pointing to the top)

- Maximum stacking height
  Example: not stackable - do not stack further packing case on top of the first one.

- Consult Optimum Maschinen Germany GmbH if the machine and accessories are stored for more than three months or are stored under different environmental conditions than those specified here.

7.4 Advice for disposal / Options of reuse:

Please dispose of your equipment in an environmentally friendly manner, by not placing waste in the environment but in a professional manner.

Please do not simply throw away the packaging and later the disused machine, but dispose of both in accordance with the guidelines laid down by your city council/local authority or by an authorised disposal company.

7.4.1 Disposal of new device packaging

All used packaging materials and packaging aids from the machine are recyclable and generally need to be supplied to the material reuse.

Any packaging components made of cardboard box can be chopped up and supplied to the waste paper collection.

The films are made of polyethylene (PE) and the cushion parts are made of polystyrene (PS). These materials can be reused after reconditioning if they are passed to a collection station or to the appropriate waste management enterprise.

Only forward the packaging materials correctly sorted to allow direct reuse.

7.4.2 Disposal of the old device

INFORMATION

Please take care in your interest and in the interest of the environment that all component parts of the machine are only disposed of in the intended and admitted way.

Please note that the electrical devices comprise a variety of reusable materials as well as environmentally hazardous components. Please ensure that these components are disposed of separately and professionally. In case of doubt, please contact your municipal waste management. If appropriate, call on the help of a specialist waste disposal company for the treatment of the material.

7.4.3 Disposal of electrical and electronic components

Please make sure that the electrical components are disposed of professionally and according to the statutory provisions.

The device is composed of electrical and electronic components and must not be disposed of as household waste. According to the European Directive 2015/863/EU regarding electrical and electronic used devices and the implementation of national legislation, used power tools need to be collected separately and supplied to an environmentally friendly recycling centre.

As the machine operator, you should obtain information regarding the authorised collection or disposal system which applies for your company.

Please make sure that the electrical components are disposed of professionally and according to the legal regulations. Please only throw depleted batteries in the collection boxes in shops or at municipal waste management companies.

7.5 Disposal via municipal collection facilities

Disposal of used electrical and electronic components (Applicable in the countries of the European Union and other European countries with a separate collecting system for those devices).

The sign on the product or on its packing indicates that the product must not be handled as common household waste, but that is needs to be disposed of at a central collection point for recycling. Your contribution to the correct disposal of this product will protect the environment and the public health. Incorrect disposal constitutes a risk to the environment and public health. Recycling of material will help reduce the consumption of raw materials. For further information about the recycling of this product, please consult your District Office, municipal waste collection station or the shop where you have purchased the product.

7.6 Product follow-up

We are required to perform a follow-up service for our products which extends beyond shipment.

We would be grateful if you could inform us of the following:

- ☐ Modified settings
- ☐ Any experiences with the magnetic drill which might be important for other users
- ☐ Recurring malfunctions

Optimum Maschinen Germany GmbH
Dr.-Robert-Pfleger-Str. 26

D-96103 Hallstadt

Fax +49 (0) 951 - 96 555 - 888
email: info@optimum-maschinen.de

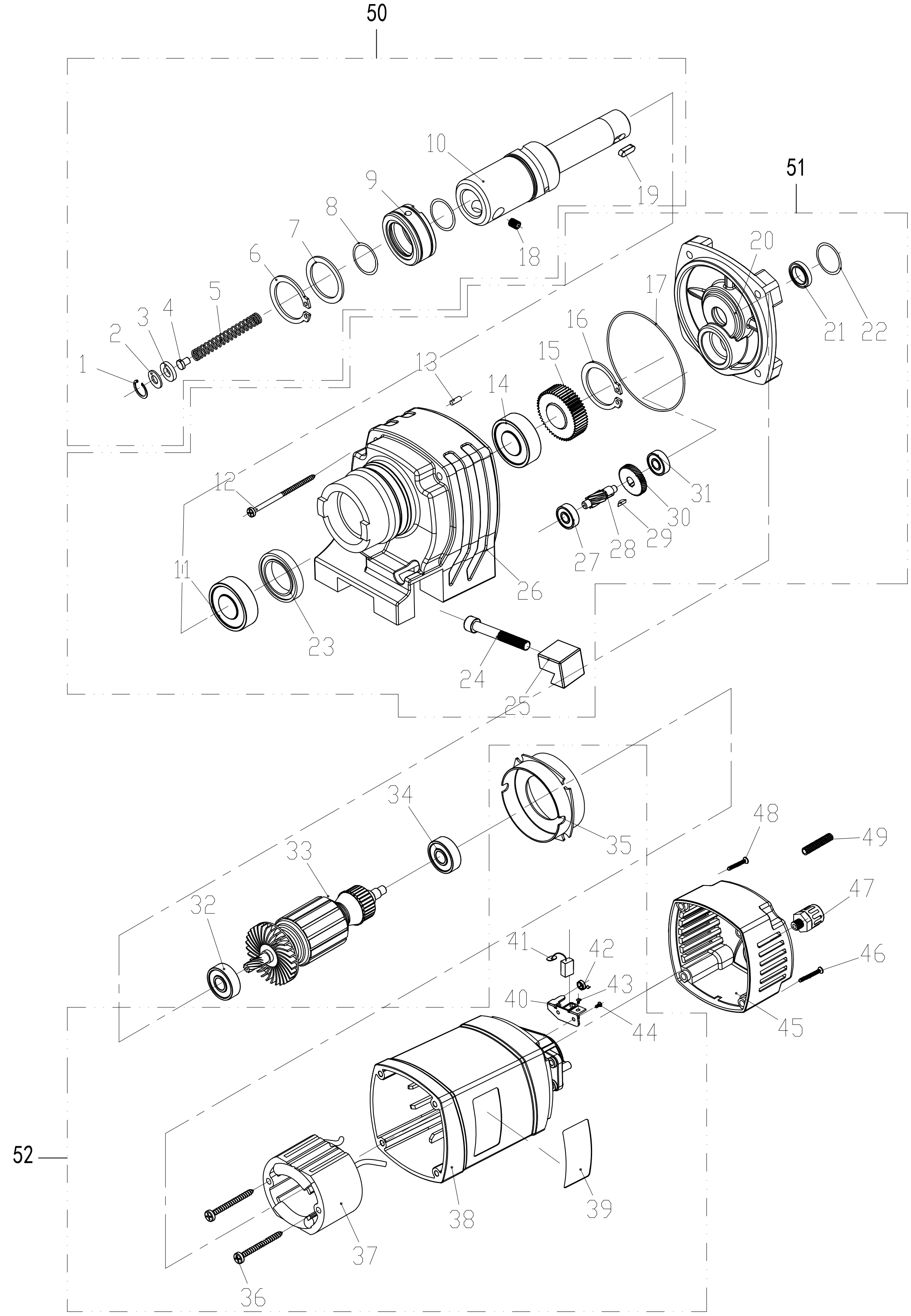
7.7 Change information operating manual

Chapter	Short summary	new version number
all	new article numbers	1.0.2
4	Mounting stop on coolant ring	1.0.3
4	Using OPTIdrill DM36VT and OPTIdrill DM35PF	1.0.4
4	Security check removed due to too different diversity	1.0.5
CE	Directive 2015/863/EC	1.0.6
2	technical specification, drill capacity and spindle speeds	1.0.7
1.1.2 ; 4 ; 4.2	Symbol + Magnetisation check	1.0.8
3	IP protection class	1.0.9
2	DM60V speed	1.1.0
4	Motor fan speed vs. cooling under load	1.1.1
3	Capacitor discharge on speed-controlled machines	1.1.2

8 Ersatzteile - Spare parts

8.1 DM35

8.1.1 Bohrkopf- Drilling head

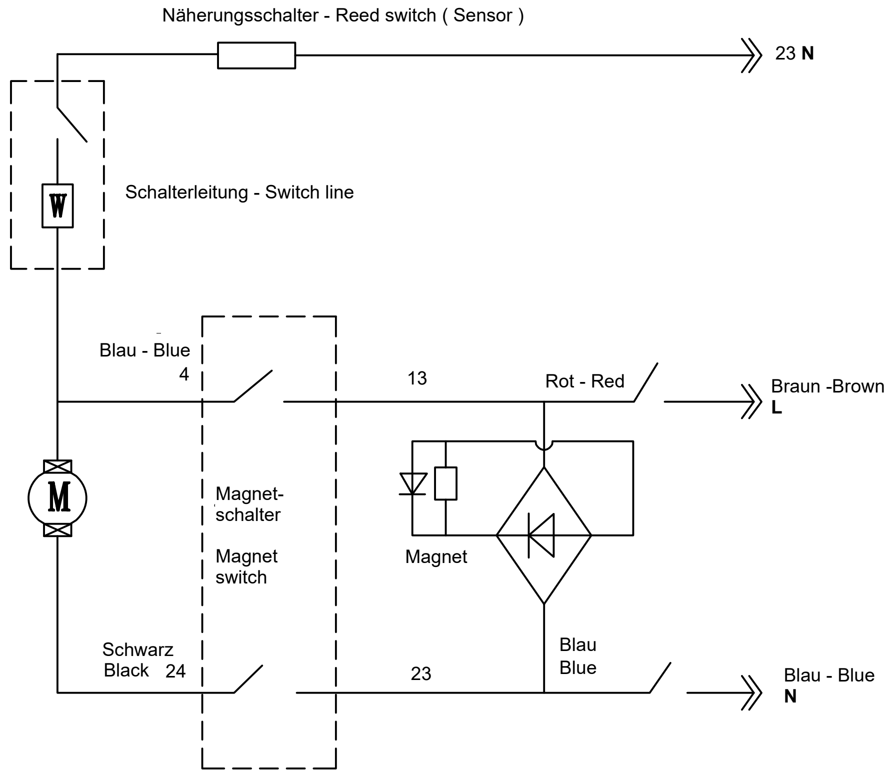


8-1: Bohrkopf - Drilling head - DM35

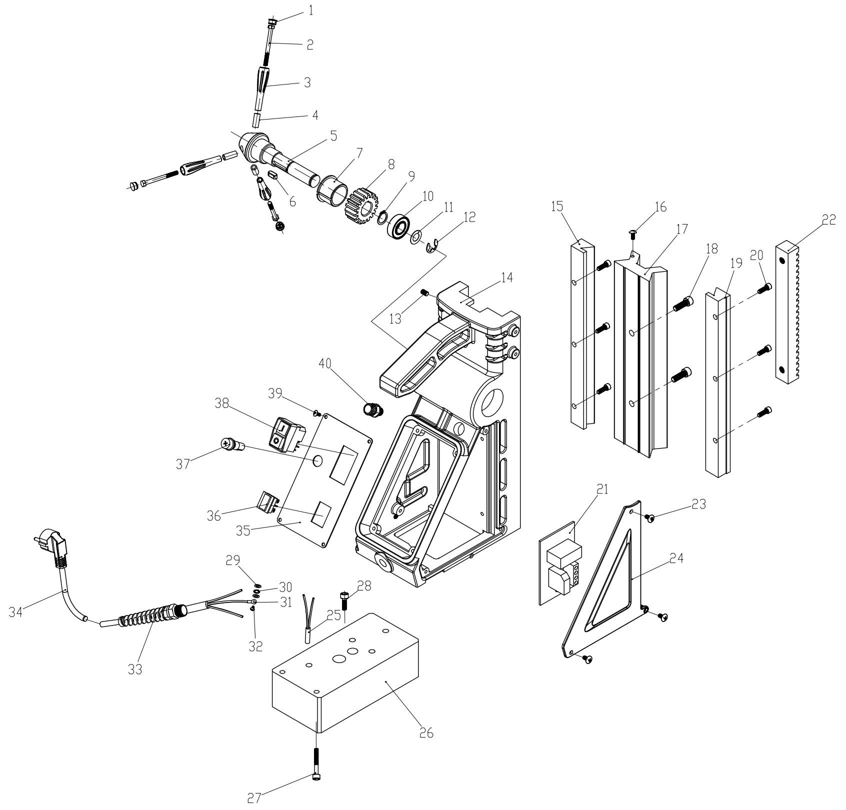
Ersatzteilliste Bohrkopf- Spare part list drilling head - DM35

Pos.	Bezeichnung	Description	Größe	Art. nummer	Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.				Size	Item no.
1	Sicherungsring, innen	Circlip, Inner	Ø19 mm	042SR19W	30	Rotor Zahnrad	Rotor gear		03071050130
2	Dichtung	Gasket			31	Lager	Bearing	LFB608	0406008R
3	Polyurethanscheibe	PU washer			32	Lager	Bearing	NSK6000	0406000ZZ
4	Federkleme für Feder	Pin for spring		03071035104	33	Rotor	Rotor		03071035133
5	Feder	Spring		03071035105	34	Lager	Bearing	NSK608	0406008ZZ
6	Sicherungsring, innen	Circlip, Inner	Ø33 mm		35	Luftleitring	Air conducting ring		03071035135
7	Ring	Ring	33x48x1 mm		36	Blechschraube	Tapping screw		
8	Pressspannscheibe	Pressboard washer			37	Stator	Stator		03071035137
9	Kühlwasserring	Coolant water ring			38	Motorgehäuse	Motor Housing		03071035138
10	Spindel	Spindle		03071035110	39	Typenschild	Nameplate		
11	Lager	Bearing	JVB6904		40	Bürstenhalter	Brush holder		
12	Gehäuseschraube	Casing screw	M5x70		41	Kohlebürste	Carbon brush		03071050141
13	Zylindrischer Stift	Cylindrical pin			42	Bürstenfeder	Brush spring		
14	Lager	Bearing	JVB6904		43	Schraube	Screw	M4x8	
15	Zahnrad	Gear		03071050115	44	Schraube	Screw	M4x12	
16	Sicherungsring, außen	Circlip, outter	Ø20 mm	042SR20W	45	Motor Abdeckung	Motor cover		03071236150
17	O Ring	O ring			46	Gehäuseschraube	Casing screw	M4x45	
18	Stiftschraube	Set screw	M10x12		47	Zugentlastung Kabel	Strain relief cable		
19	Stift	Pin	6x10 mm		48	Gehäuseschraube	Casing screw	M5x40	
20	Getriebedeckel	Gear Cover		03071035120	49	Kabelschutz	Cable protection		
21	Wellendichtring	Shaft sealing ring	10x16x4 mm		50	Komplette Spindel	Complete spindle		03071035150
22	O Ring	O ring	29x1,8 mm		51	Komplettes Getriebe	Complete gear		03071035151
23	Wellendichtring	Shaft sealing ring	20x32x7 mm	04120327	52	Kompletter Motor	Complete motor		03071035152
24	Schraube	Screw	M8x50		K	Transportkoffer	Tranport case		03071035K
25	Schwalbenschwanznut - Stahl	Dovetail groove - steel							
26	Getriebegehäuse	Gear Box		03071035126					
27	Lager	Bearing	LFB608	0406008R					
28	Rotorritzel	Rotor pinion		03071050128					
29	Passfeder	Key	9x9x3 mm						

8.1.2 Schaltplan - Wiring diagram



8.1.3 Magnetstand - Magnetic stand



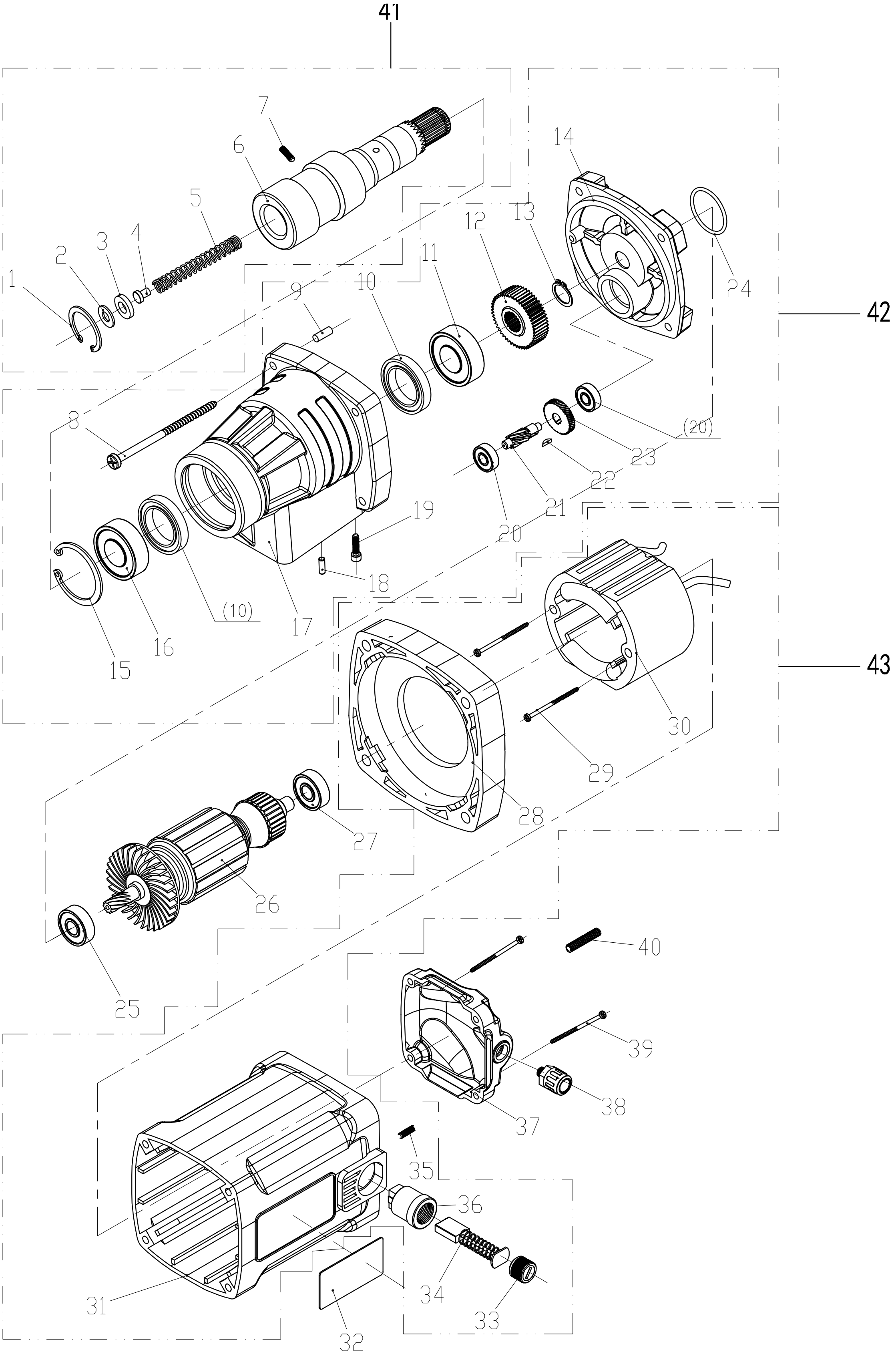
8-2: Magnetstand - Magnetic stand - DM35

Ersatzteilliste Magnetstand- Spare part list magnetic stand - DM35

Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.
1	Anschlag	Stopper		03071050203CPL
2	Schraube	Screw	M10x150	
3	Griff	Handle		
4	Griffhülse	Handle sleeve		03071050204
5	Vorschubwelle	Feed shaft		03071035205
6	Stift	Pin	6x6x12 mm	042P6612
7	Kupferring	Copper ring		03071035207
8	Vorschubzahnrad	Feed gear		03071050208
9	Sprengring	Snap spring		
10	Lager	Bearing	LFB6903	0406903ZZ
11	Lagerdeckel	Bearing cover	17x30x1 mm	
12	Sicherungsring	E-Circlip	Ø15mm	042SR15I
13	Schraube	Screw	M5x12	
14	Ständer	Stand		
15	Linke Führungsschiene	Left rail track bar		03071035215
16	Schraube	Screw		
17	Schwalbenschwanzführung	Dovetail groove guide rail		03071035217
18	Schraube	Screw	M6x16	
19	Rechte Führungsschiene	Right rail track bar		03071035219
20	Schraube	Screw	M4x20	
21	Leiterplatte	Circuit board		03071050221
22	Zahnstange	Toothed rack		03071035222
23	Schraube	Screw	M4x6	
24	Dreieckplatte	Triangle plate		
25	Näherungsschalter	Reed switch		03071035225
26	Magnet	Magnet		03071035226
27	Schraube	Screw	M6x55	
28	Schraube	Screw	M6x20	
29	Flache Dichtung	Flat gasket		
30	Dichtung	Gasket		
31	Verbindung	Joint		
32	Schraube	Screw	M4x8	
33	Knickschutz	Kink protection		
34	Anschlusskabel	Connecting lead		
35	Typenschild	Nameplate		
36	Schalter	Switch		03071050236
37	Sicherung	Fuse	F 0,75A	03071035237
38	Schalter	Switch		03071050238
39	Schraube	Screw	M3x6	
40	Zugentlastung	Strain relief		

8.2 DM35V

8.2.1 Bohrkopf- Drilling head

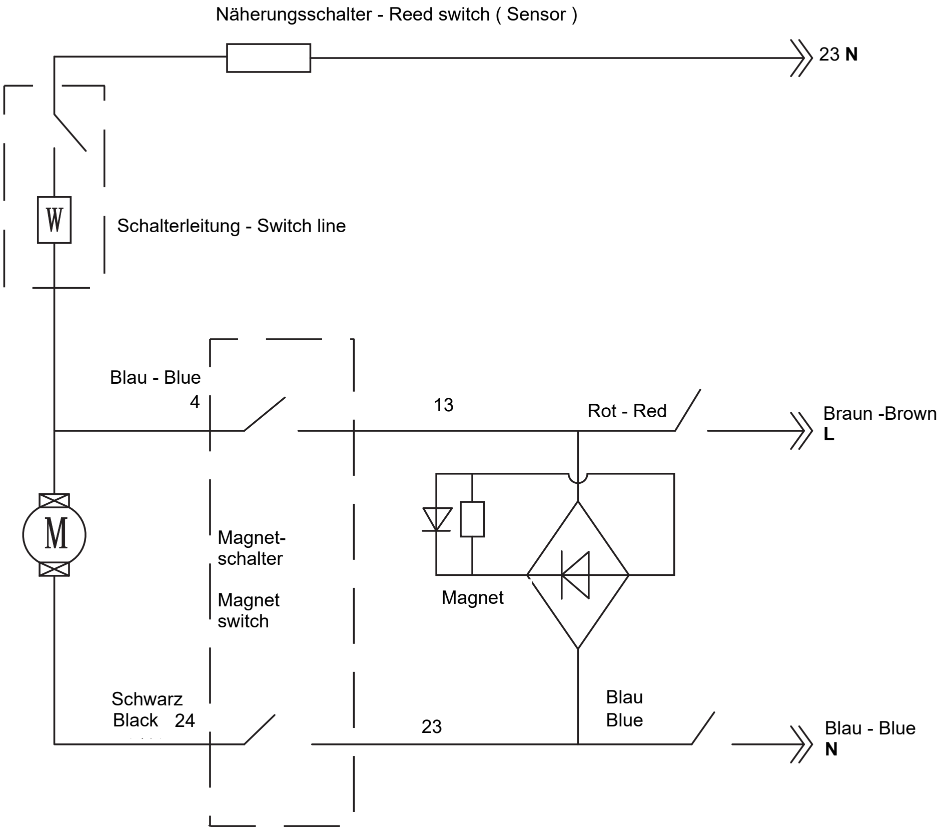


8-3: Bohrkopf - Drilling head - DM35V

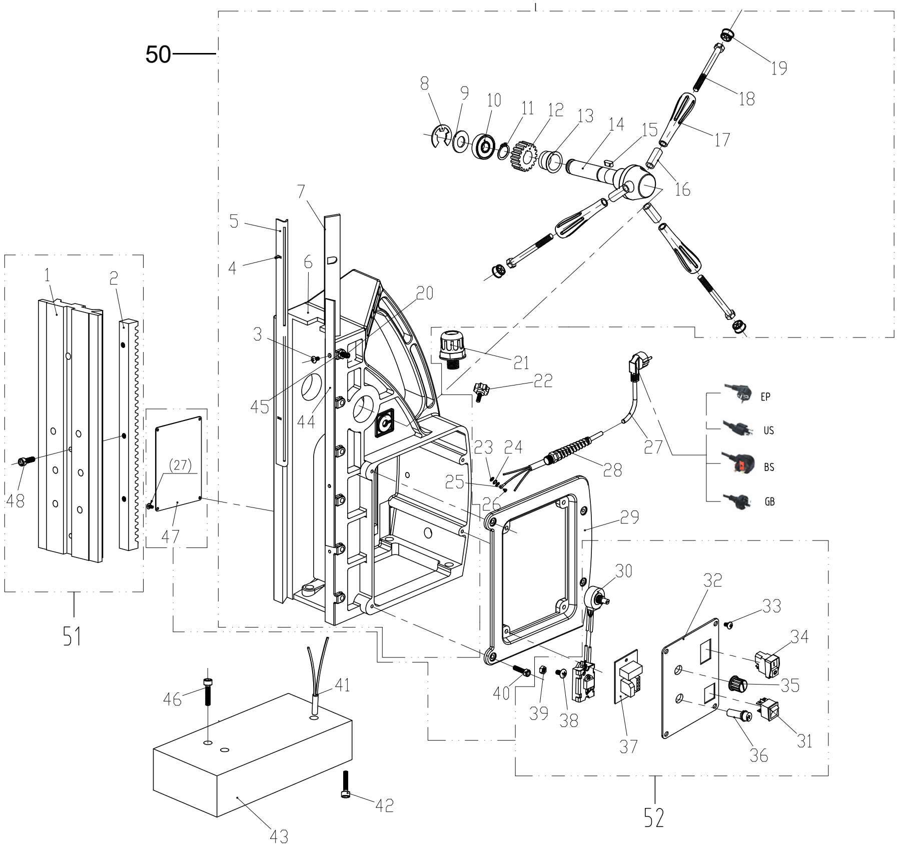
Ersatzteilliste Bohrkopf - Spare part list drilling head - DM35V

Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.
1	Sicherungsring, innen	Circlip, inner	19	042SR19W
2	Dichtung	Gasket	2	
3	Polyurethanscheibe	PU washer		
4	Stift für Feder	Pin for spring		03071135104
5	Feder	Spring		03071550105
6	Spindel	Spindle		03071135106
7	Stiftschraube	Set screw	M10x12	
8	Gehäuseschraube	Casing screw	M5x55	
9	Zylindrischer Stift	Cylindrical pin	4x12	
10	Wellendichtring	Shaft sealing ring	22x32x7	04122327
11	Lager	Bearing	61904	04061904R
12	Zahnrad	Gear		03071150112
13	Sicherungsring, außen	Circlip, outer	17	042SR17W
14	Getriebedeckel	Gear cover	13	03071135114
15	Sicherungsring, innen	Circlip, Inner	42	042SR42W
16	Lager	Bearing	61905	04061905
17	Getriebegehäuse	Gear box	13	03071135117
18	Zylindrischer Stift	Cylindrical pin	5x15	
19	Zylinderschraube mit Innensechskant	Socket head cap screws	M5x20	
20	Lager	Bearing	608	0406008R
21	Rotorritzel	Rotor pinion		03071050128
22	Passfeder	Key	3x9	03071135122
23	Rotor Zahnrad	Rotor gear		03071050130
24	Pressspannscheibe	Pressboard washer	25.8x1.8	
25	Lager	Bearing	6000	0406000R
26	Rotor	Rotor		03071135126
27	Lager	Bearing	608	0406008R
28	Luftleitring	Air conducting ring	80	03071135128
29	Schraube	Screw	M4x65	
30	Stator	Stator		03071135130
31	Motorgehäuse	Motor housing	80	03071135131
32	Schild für Logo	Nameplate for Logo		
33	Abdeckung Kohlebürste	Brush cover	80	03071135133
34	Kohlebürste	Carbon brush		03071150134
35	Schraube	Screw	M5x5	
36	Bürstenhalter	Brush holder		03071150136
37	Motor Abdeckung	Motor cover		03071135137
38	Zugentlastung	Strain relief	M12x1.5	
39	Gehäuseschraube	Casing screw	M5x25	
40	Kabelschutz	Cable protection		
41	Komplette Spindel	Complete spindle		03071135141
42	Komplettes Getriebe	Complete gear		03071135142
43	Kompletter Motor	Complete motor		03071135143
K	Transportkoffer	Transport case		03071135K

8.2.2 Schaltplan - Wiring diagram



8.2.3 Magnetstand - Magnetic stand

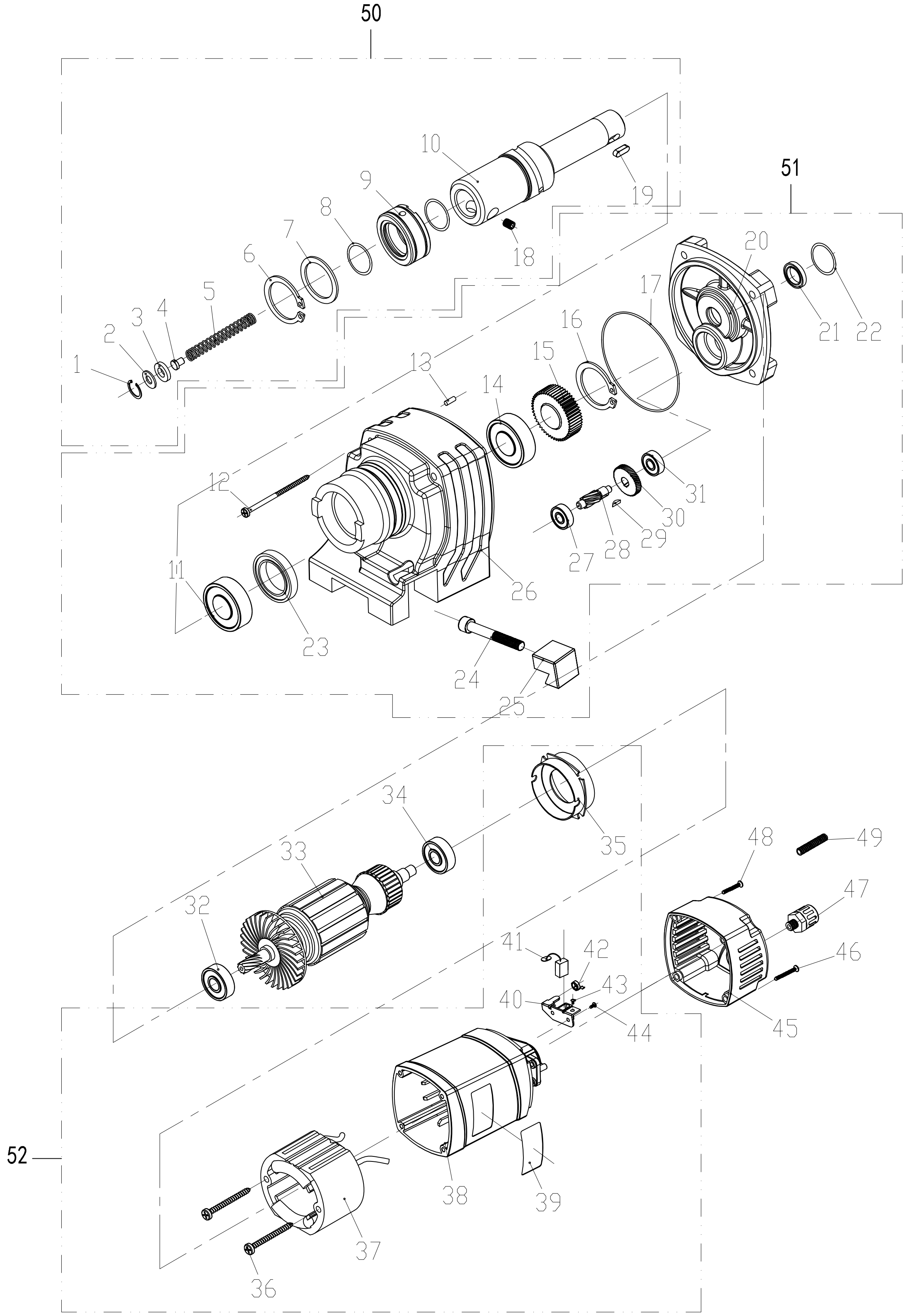


Ersatzteilliste Magnetstand- Spare part list magnetic stand - DM35V

Pos.	Bezeichnung	Description	Größe	Art. nummer	Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.				Size	Item no.
1	Gleitschlitten	Sliding carriage	180x80		27	Anschlusskabel	Connecting lead		
2	Zahnstange	Toothed rack	10x16x180		28	Knickschutz	Kink protection	M12x1.5	
3	Kreuzschlitzschraube	Cross screw	M3x8		29	Einbaurahmen	Panel frame		03071135229
4	Spannstift	Dowel Pin	3x8		30	Drehzahlregler	Speed controller		03071135230
5	Führungsstreifen	Guide strip	1.5x230		31	Schalter	Switch		03071050236
6	Ständer	Stand			32	Frontplatte	Front panel		03071135232
7	Einstellbare Platte	Adjustable plate	3x12x230		33	Rostfreie Schraube	Stainless screw	M3x6	
8	Sicherungsring	E-Circlip	15	042SR15W	34	Wasserdichter Schalter	Waterproof switch		03071050238
9	Lagerdeckel	Bearing cover			35	Drehzahlschalter	Speed switch		03071550231
10	Lager	Bearing			36	Sicherung	Fuse		03071135236
11	Sicherungsring, außen	Circlip, outer	18	042SR18W	37	Leiterplatte	Circuit board		03071135237
12	Zahnrad	Gear		03071050208	38	Schraube	Screw	M4x15	
13	Lager	Bearing		03071135213	39	Mutter	Nut	M4	
14	Vorschubwelle	Feed shaft		03071135214	40	Schraube	Screw	4x10	
15	Passfeder	Square key	5x14	042P5516	41	Näherungsschalter	Reed switch		03071135241
16	Griffhülse	Handle sleeve	10.5x16x38	03071050204	42	Schraube	Screw	M6x55	
17	Griff	Handle		03071050203CPL	43	Magnet	Magnet		03071135243
18	Schraube	Screw	M10x150		44	Druckleiste	Pressure bar		
19	Anschlag	Stopper		03071135219	45	Mutter	Nut	M5	
20	Schraube	Screw	M5x20		46	Schraube	Screw	M6x20	
21	Zugentlastung	Strain relief	M12x1.5		47	Rückwand	Back panel		
22	Schraube	Screw	M5x12		48	Schraube	Screw	M6x16	
23	Flache Dichtung	Flat Seal	4		50	Ständer komplett	Stand complete		
24	Dichtung	Gasket	4		51	Gleitschlitten komplett	Carriage complete		
25	Verbindung	Joint			52	Schaltertafel komplett	Switch panel complete		
26	Schraube	Screw	M4x8						

8.3 DM35PF

8.3.1 Bohrkopf- Drilling head

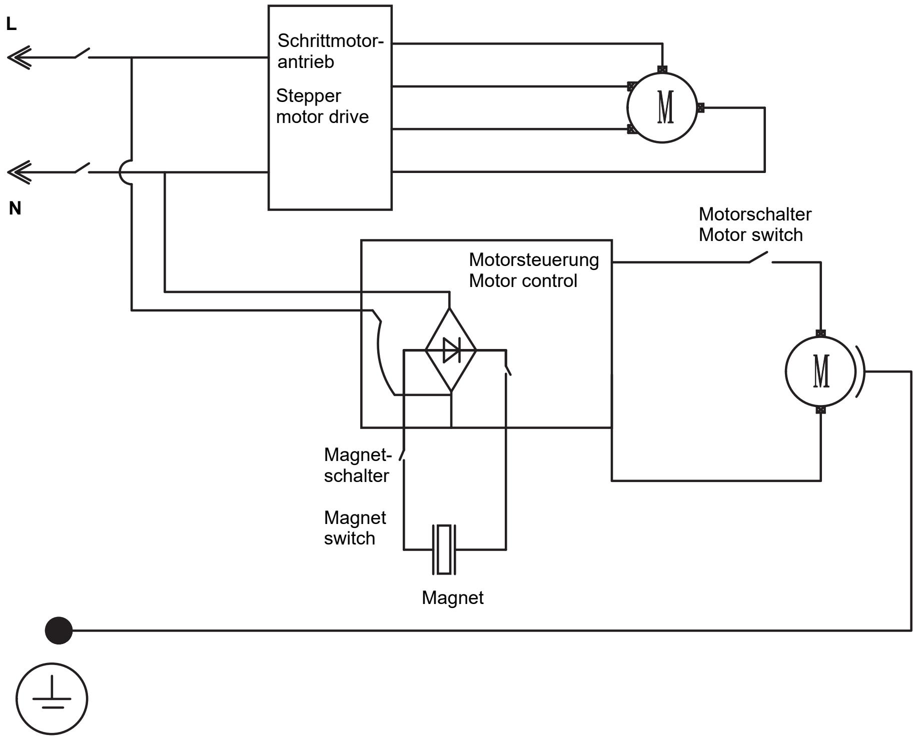


8-4: Bohrkopf - Drilling head - DM35PF

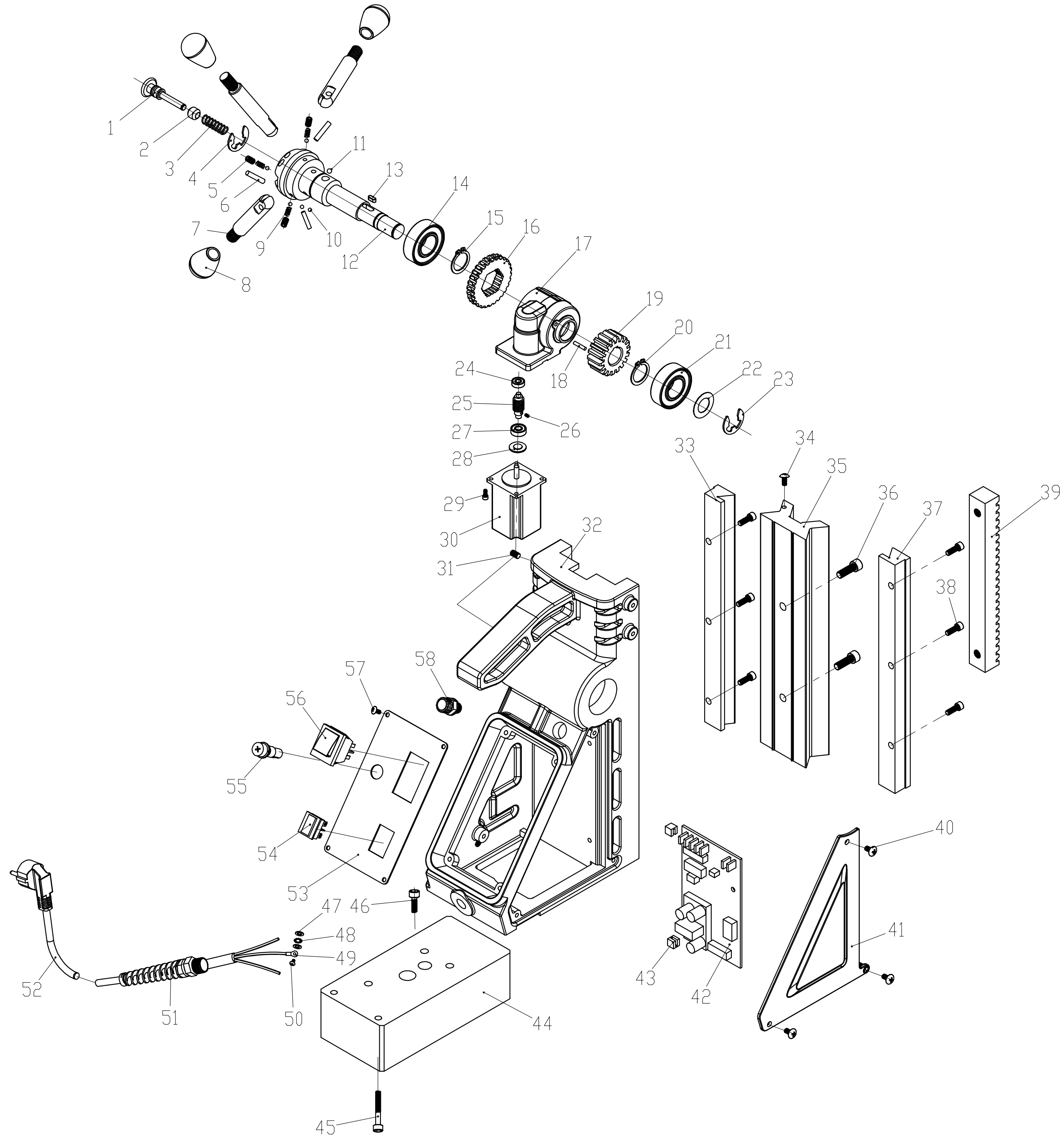
Ersatzteilliste Bohrkopf- Spare part list drilling head - DM35PF

Pos.	Bezeichnung	Description	Größe	Art. nummer	Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.				Size	Item no.
1	Sicherungsring, innen	Circlip, inner	19		35	Luftleitring	Air conducting ring		03071050135
2	Dichtung	Gasket	9*19*2		36	Blechschraube	Self tapping screw	M4x60	
3	Polyurethanscheibe	PU washer			37	Stator	Stator		03071035137
4	Stift für Feder	Pin for spring		03071435104	38	Motorgehäuse	Motor Housing		03071435138
5	Feder	Spring	11.5x10.5	03071035105	39	Typenschild	Nameplate		
6	Sicherungsring, außen	Circlip, outer	33		40	Halter Kohlebürste	Carbon Brush holder		03071050140
7	Dichtung	Gasket	33x48x1		41	Kohlebürste	Carbon Brush		03071050141
8	O Ring	O-ring	40x2		42	Bürstenfeder	Brush spring		
9	Kühlwasserring	Coolant water ring		03071435109	43	Schraube	Screw	M4x8	
10	Spindel	Spindle		03071435110	44	Schraube	Screw	M4x12	
11	Lager	Bearing	JVB6904	0406904R	45	Motor Abdeckung	Motor cover	40x2	03071236150
12	Gehäuseschraube	Casing screw	M5x70		46	Gehäuseschraube	Casing screw	M5x45	
13	Stift	Pin	4x12		47	Zugentlastung	Strain relief	M12x1.5	
14	Lager	Bearing	JVB6904	0406904R	48	Gehäuseschraube	Casing screw	M5x40	
15	Zahnrad	Gear			49	Kabelschutz	Cable protection		
16	Sicherungsring, außen	Circlip, outer	20	042SR20W	50	Komplette Spindel	Complete spindle		03071435150
17	O Ring	O-ring	73x2		51	Komplettes Getriebe	Complete gear		03071435151
18	Stiftschraube	Set screw	M10x12		52	Kompletter Motor	Complete motor		03071435152
19	Passfeder	Key	6x10	042P6612	K	Transportkoffer	Transport case		03071435K
20	Getriebedeckel	Gear cover		03071435120					
21	Wellendichtring	Shaft sealing ring	10x16x4						
22	O Ring	O-ring	29x1.8						
23	Wellendichtring	Shaft sealing ring	20x32x7	04120327					
24	Rostfreie Schraube	Stainless screw	M8x50						
25	Schwalbenschwanznut - Stahl	Dovetail groove - steel		03071435125					
26	Getriebegehäuse	Gear box		03071435126					
27	Lager	Bearing	LFB608	0406008R					
28	Rotorritzel	Rotor pinion		03071050128					
29	Stift	Pin	9x3						
30	Rotor Zahnrad	Rotor gear		03071050130					
31	Lager	Bearing	LFB608	0406008R					
32	Lager	Bearing	NSK6000	0406000ZZ					
33	Rotor	Rotor		03071435133					
34	Lager	Bearing	NSK608	0406008ZZ					

8.3.2 Schaltplan - Wiring diagram



8.3.3 Magnetstand - Magnetic stand



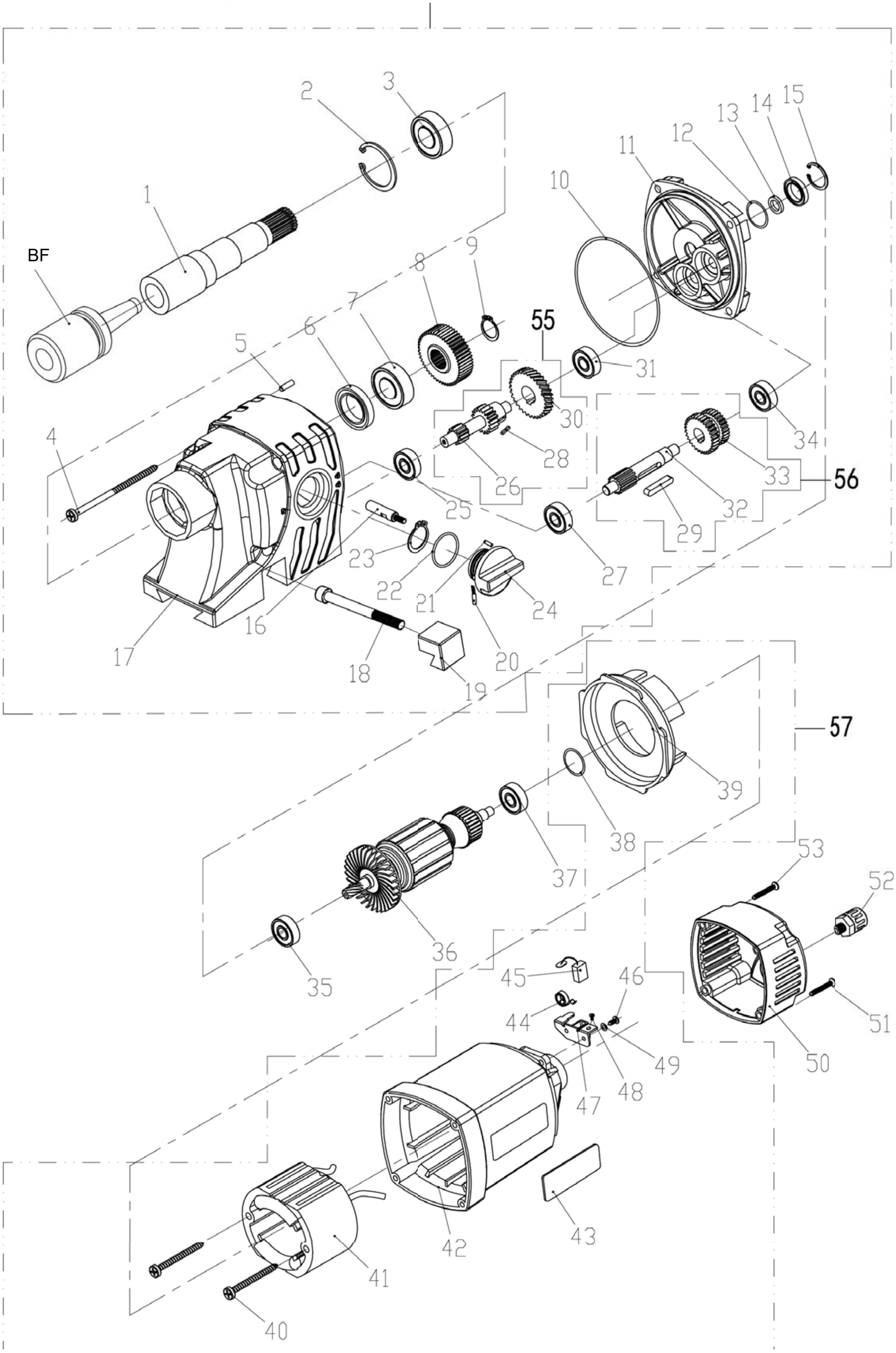
8-5: Magnetstand - Magnetic stand - DM35PF

Ersatzteilliste Magnetstand- Spare part list magnetic stand - DM35PF

Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.
1	Obere Stange	Top rod		03071435201
2	Obere Kugel	Top ball	6.5x12	03071435202
3	Feder	Spring	9x26	03071435203
4	Sicherungsring	E-Circlip	15	
5	Schraube	Screw	M5x5	
6	Stift	Pin	6x26	
7	Vorschubhebel	Feed lever		03071435207
8	Bakelit Kugelgriff	Bakelite ball handle		03071435208
9	Feder	Spring	4x10	
10	Stahlkugel	Steel ball	5	
11	Stahlkugel	Steel ball	8	
12	Vorschubwelle	Feed shaft		03071435212
13	Passfeder	Key	5x14	
14	Lager	Bearing		
15	Sicherungsring, innen	Circlip, inner	30	
16	Zahnrad	Gear		03071435216
17	Motor Lagerbock	Motor bearing pedestal		03071435217
18	Stift	Pin	4x12	
19	Zahnrad	Gear	18x44x16	03071050208
20	Sicherungsring, außen	Circlip, outer	18	
21	Lager	Bearing	6903	
22	Lagerdeckel	Bearing cover	17x30x0.5	
23	Sicherungsring	E-Circlip	15	
24	Lager	Bearing		
25	Zahnrad	Gear		03071435225
26	Schraube	Screw		
27	Lager	Bearing		
28	Stahlscheibe	Steel washer	25x38x3	
29	Schraube	Screw	M4x8	
30	Motor	Motor		03071435230
31	Schraube	Screw	M5x12	
32	Ständer	Stand		
33	Linke Führungsschiene	Left rail track bar	17x230	
34	Schraube	Screw	M5x8	
35	Schwalbenschwanz- führung	Dovetail groove guide rail		
36	Innensechskantschraube	Inner hexagon screw	M6x16	
37	Rechte Führungsschiene	Right rail track bar	17x230	
38	Innensechskantschraube	Inner hexagon screw	M4x20	
39	Zahnstange	Toothed rack		
40	Schraube	Screw	M4x6	
41	Dreieckplatte	Triangle plate		
42	Leiterplatte	Circuit board		03071435242
43	Kleiner Plastikknopf	Small plastic knob		
44	Magnet	Magnet	172.5x90x50.5	03071435244
45	Innensechskantschraube	Inner hexagon screw	M5x55	
46	Innensechskantschraube	Inner hexagon screw	M5x20	
47	Flachdichtung	Flat gasket	4	
48	Dichtung	Gasket	4	
49	Verbindung	Joint		
50	Schraube	Screw	M4x8	
51	Knickschutz	Kink protection	M12x1.5	
52	Anschlusskabel	Connecting lead		
53	Typenschild	Name plate		
54	Schalter	Switch		03071050236
55	Sicherung	Fuse		03071435255
56	Schalter	Switch		03071550230

8.4 DM36VT

8.4.1 Bohrkopf- Drilling head

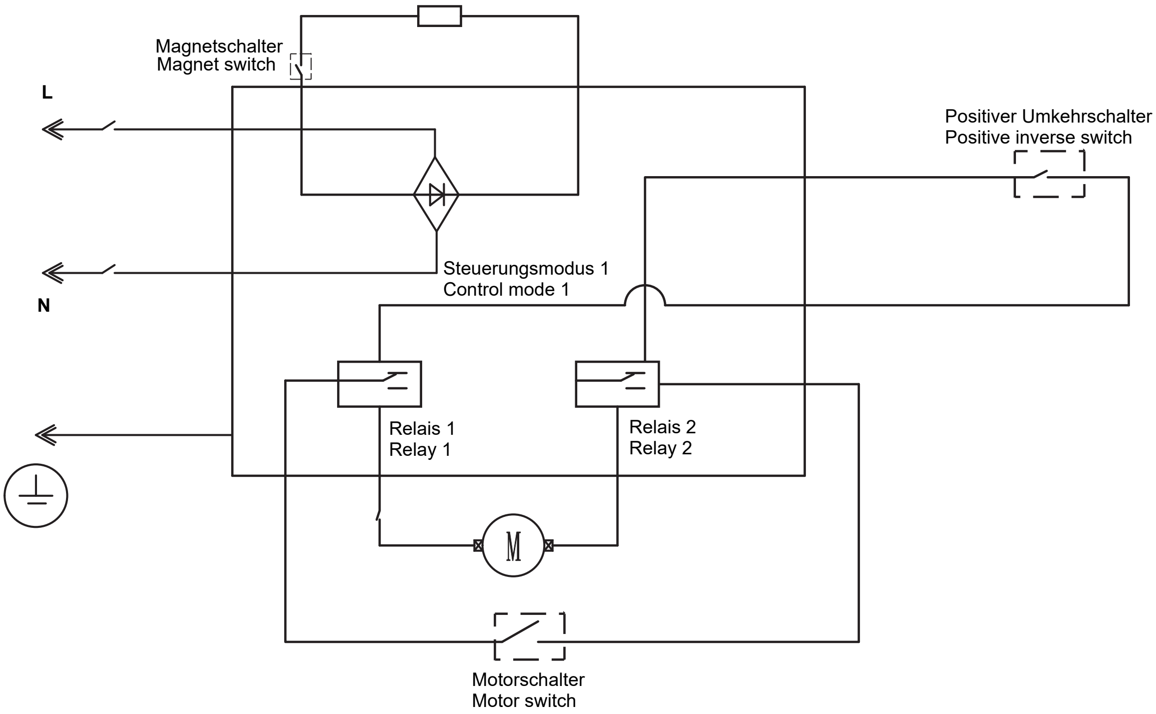


8-6: Bohrkopf - Drilling head - DM36VT

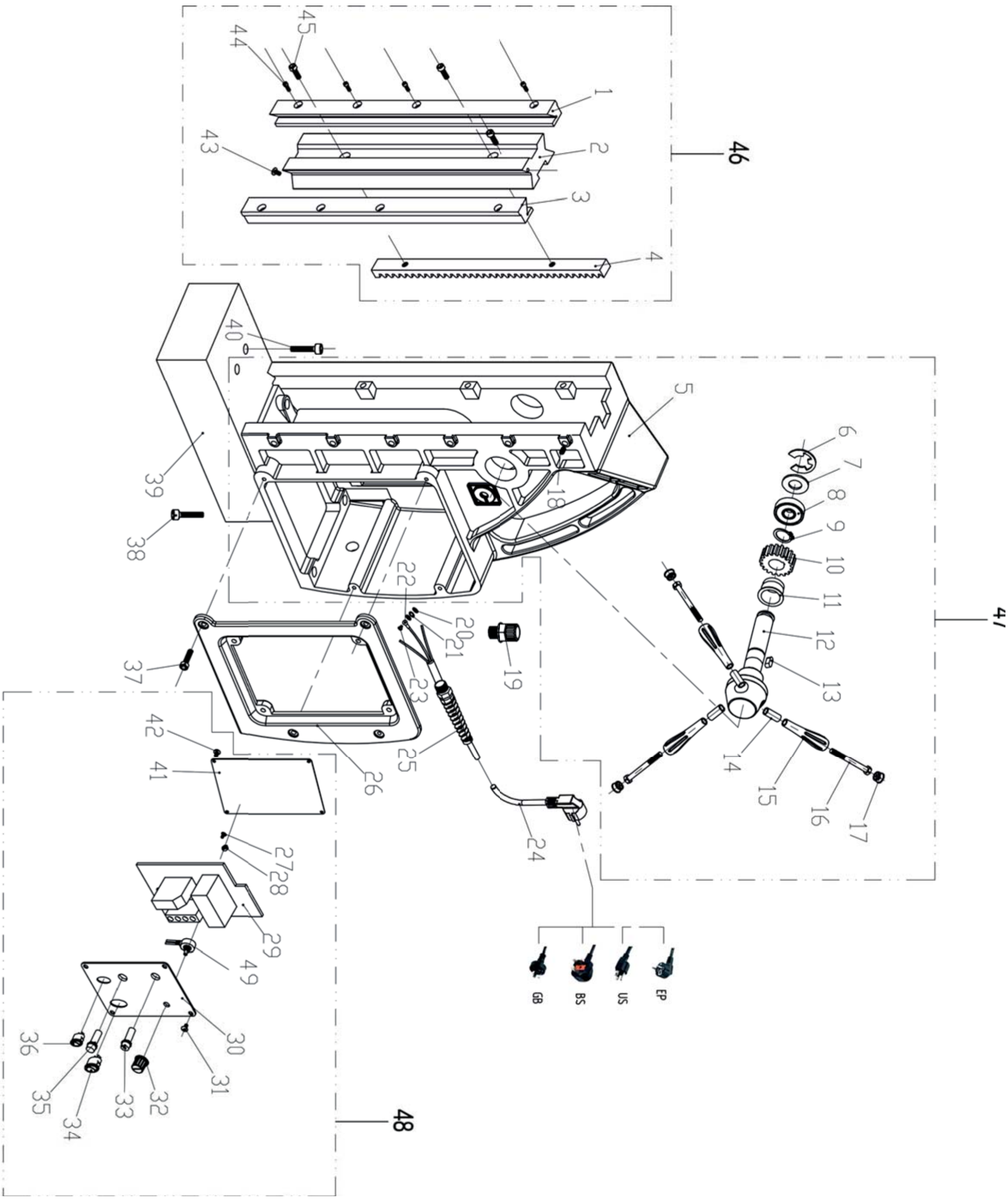
Ersatzteilliste Bohrkopf - Spare part list drilling head - DM36VT				
Pos.	Bezeichnung	Description	Größe Size	Art. Item no.
1	Spindel	Spindle		03071236101
2	Sicherungsring, innen	Circlip, inner	42	042SR42W
3	Lager	Bearing	LFB6905	0406905R
4	Gehäuseschraube	Casing screw	M5x60	
5	Stift	Pin	4x12	
6	Wellendichtring	Shaft sealing ring	20x32x7	04120327
7	Lager	Bearing	16003	04016003
8	Getriebezahnrad	Transmission gear		03071550115
9	Sicherungsring, außen	Circlip, outer	16	042SR16W
10	O Ring	O ring	92x2	03071236110
11	Getriebedeckel	Gear cover	40	03071236111
12	O Ring	O ring	28x1.8	
13	Stahlring	Steel ring	15x30x27	
14	Wellendichtring	Shaft sealing ring	10x16x4	
15	Sicherungsring, innen	Circlip, inner	47	042SR47I
16	Schaltstange	Selector rod		03071236116
17	Getriebegehäuse	Gear box		03071236117
18	Schraube	Screw	M8x50	
19	Schwalbenschwanznut - Stahl	Dovetail groove - steel		03071236119
20	Nietfedersatz	Rivet spring set	4x15	
21	Stift	Pin	3x9	
22	O Ring	O ring	22.4x2.65	
23	Sicherungsring, außen	Circlip, outer	26	042SR26W
24	Getriebeschalter	Gearbox switch	40	03071550136
25	Lager	Bearing	608	0406008R
26	Rotor Getriebewelle	Rotor gear shaft	8x59.7	03071236126
27	Lager	Bearing	608	0406008R
28	Passfeder	Key	4x6	042P4410
29	Passfeder	Key	5x30	042P5530
30	Rotor Zahnrad	Rotor gear	39.3x8x15	03071236130
31	Lager	Bearing	608	0406008R
32	Rotorzahnwelle	Rotor toothed shaft		03071236132
33	Rotorritzel	Rotor pinion		03071236133
34	Lager	Bearing	608	0406008R
35	Lager	Bearing	6001	0406001R
36	Rotor	Rotor		03071236136
37	Lager	Bearing	608	0406008R

38	O Ring	O ring	22.4x2.65	
39	Luftleitring	Air conducting ring	40	03071236139
40	Schraube	Screw	M4x65	
41	Stator	Stator		03071236141
42	Motorgehäuse	Motor housing	40	03071236142
43	Typenschild	Nameplate		
44	Bürstenfeder	Brush spring	40	
45	Kohlebürste	Carbon brush	40	03071050141
46	Schraube	Screw	M4x12	
47	Halter Kohlebürste	Brush holder	40	03071236147
48	Schraube	Screw	M4x8	
49	Dichtung	Gasket	4	
50	Motor Abdeckung	Motor cover		03071236150
51	Gehäuseschraube	Casing screw	M5x40	
52	Zugentlastung	Strain relief	M12	
53	Gehäuseschraube	Casing screw	M5x45	
54	komplettes Getriebe	Complete gear		03071236154
55	komplette Zahnradkombination	Complete gear combination		
56	komplette Zahnradkombination	Complete gear combination		
57	Kompletter Motor	Complete motor		03071236157
K	Transportkoffer	Transport case		03071236K
BF	Bohrfutter	Drill Chuck		030712361BF

8.4.2 Schaltplan - Wiring diagram



8.4.3 Magnetstand - Magnetic stand



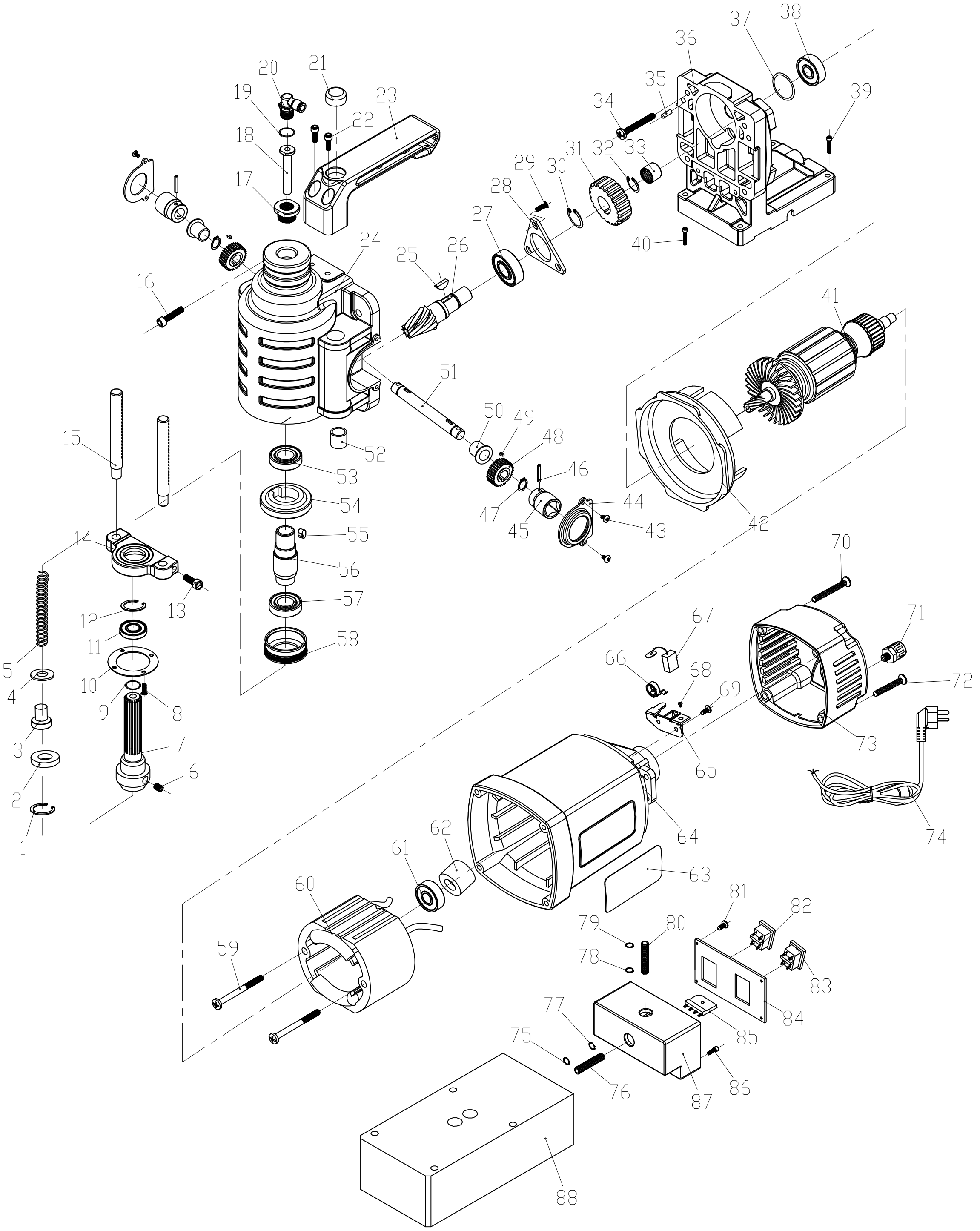
8-7: Magnetstand - Magnetic stand - DM36VT

Ersatzteilliste Magnetstand- Spare part list magnetic stand - DM36VT

Pos.	Bezeichnung	Description	Größe	Art. nummer	Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.				Size	Item no.
1	Linke Führungsschiene	Left rail track bar	17x230		25	Knickschutz	Kink protection	M12x1.5	
2	Schwalbenschwanzführung	Dovetail groove guide rail			26	Einbaurahmen	Panel frame	13	03071236226
3	Rechte Führungsschiene	Right rail track bar	17x230		27	Blechschraube	Tapping screw	M4x8	
4	Zahnstange	Toothed rack	10x16x180		28	Mutter	Nut	M3	
5	Ständer	Stand	13		29	Leiterplatte	Circuit board		03071236229
6	Sicherungsring	E-Circlip	15	042SR15W	30	Schaltertafel	Switch panel		03071236230
7	Lagerdeckel	Bearing cover	17x30x0.5		31	Rostfreie Schraube	Stainless screw	M3x6	
8	Lager	Bearing	6903	0409903R	32	Drehzahlregler	Speed controller		03071236232
9	Sicherungsring, außen	Circlip, outer	18	042SR18W	33	Schalter	Switch		03071236233
10	Vorschubzahnrad	Feed gear	18x44x16	03071236210	34	Schaltknopf	Switch knob		03071236234
11	Kupferbuchse	Copper bush	58x26x30	03071236211	35	Sicherung	Fuse		03071236235
12	Vorschubwelle	Feed shaft		03071236212	36	Schalter	Switch	KCD1-115	03071236236
13	Passfeder	Key	5x14	042P5516	37	Schraube	Screw	M4x10	
14	Griffhülse	Handle sleeve	10.5x16x38	03071050203CPL	38	Schraube	Screw	M6x55	
15	Plastikgriff	Plastic handle			39	Magnet	Magnet		03071236239
16	Schraube	Screw	M10x150		40	Schraube	Screw	M6x20	
17	Anschlag	Stopper		03071236217	41	Rückwand	Back pannel		
18	Schraube	Screw	M4x10		42	Schraube	Screw	M3x20	
19	Zugentlastung	Strain relief	M12x1.5		43	Schraube	Screw	M5x8	
20	Dichtung	Gasket	4		44	Schraube	Screw	M4x20	
21	Dichtung	Gasket	4		45	Schraube	Screw	M6x16	
22	Verbindung	Joint			46	Gleitschlitten komplett	Sliding carriage complete		
23	Schraube	Screw	M4x8		47	Bohrständer mit Vorschubhebel komplett	Drill stand with feed lever complete		
24	Anschlusskabel	Connecting lead			48	Schaltertafel komplett	Switch panel complete		
					49	Potentiometer	Potentiometer	1	03071236249

8.5 DM38VF

8.5.1 Bohrkopf- Drilling head



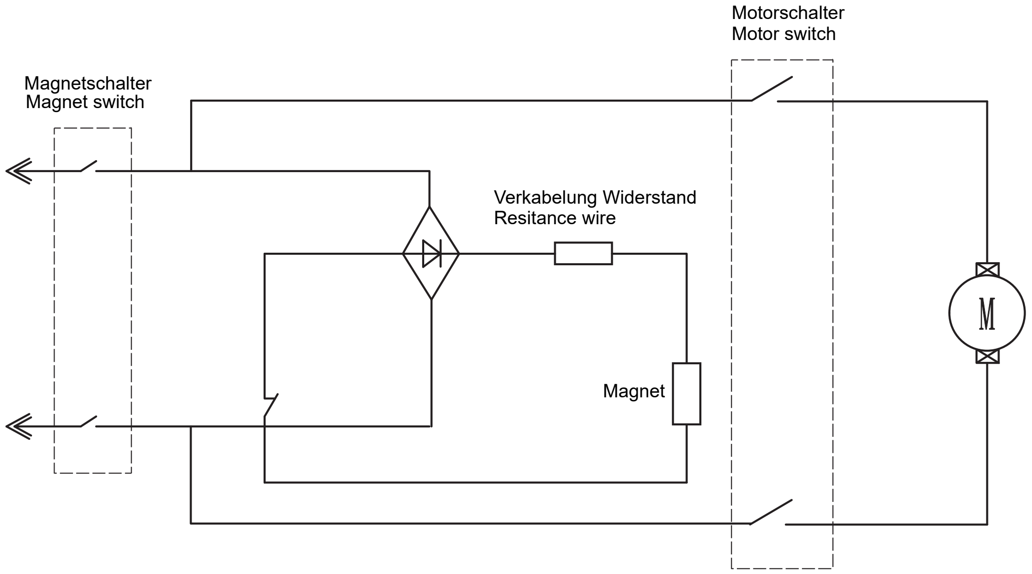
Bohrkopf - Drilling head - DM38VF

Ersatzteilliste Bohrkopf - Spare part list drilling head - DM38VF									
Pos.	Bezeichnung	Description	Größe	Art. nummer	Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.				Size	Item no.
1	Sicherungsring, innen	Circlip,inner	19	042SR19W	46	Spannstift	Dowel pin	12	
2	Polyurethanscheibe	PU washer			47	Sicherungsring	Circlip		

DM38VF_parts.fm

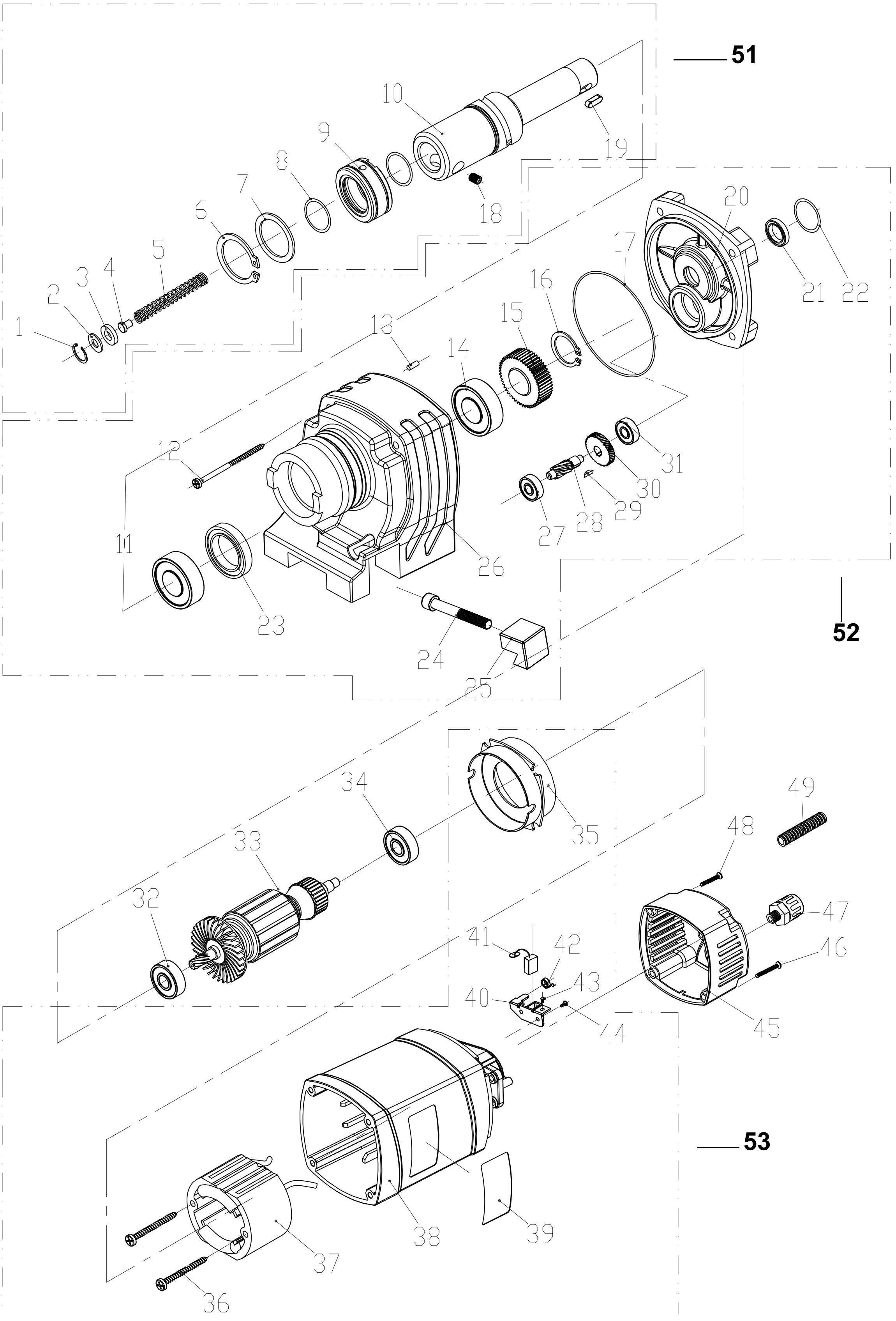
3	Stift für Feder	Pin for spring	6.5x10	0307133803
4	Rostfreie Scheibe	Stainless washer	9x19x2	
5	Feder	Spring	9x100	03071550105
6	Stiftschraube	Set screw		
7	Spindel	Spindle		0307133807
8	Kreuzschlitzschraube	Cross screw	M3x8	
9	O Ring	O-ring	6x2	
10	Abdeckplatte	Cover plate		
11	Lager	Bearing	61805	04061805R
12	Sicherungsring, außen	Circlip, outer		
13	Innensechskantschraube	Socket head cap screws	M5x16	
14	Lagerbock	Bearing pedestal		0307133814
15	Führungsstange	Guiding rod		0307133815
16	Innensechskantschraube	Socket head cap screws	M5x16	
17	Adapter	Adaptor		0307133817
18	Kühlmittelrohr	Cooling unit tube	4x6,3x90	0307133818
19	O Ring	O-ring	6x2	
20	Schwenkanschluss	Swivel connection		0307133820
21	Wasserwaage	Spirit level		0307133821
22	Innensechskantschraube	Socket head cap screws	M5x25	
23	Griff	Handle		0307133823
24	Getriebegehäuse	Gearbox		0307133824
25	Passfeder	Key	9x3x4	
26	Getriebewelle	Gear shaft		0307133826
27	Lager	Bearing	6001	0406001
28	Dreiecksplatte	Triangle plate		
29	Kreuzschlitzschraube	Cross screw	M4x8	
30	Sicherungsring, außen	Circlip, outer	12	042SR12W
31		Gear for armature		
32	Sicherungsring, außen	Circlip, outer	8	042SR8W
33	Lager	Bearing	BK0910	0307133833
34	Gehäuseschraube	Casing screw	M5x40	
35	Stift	Pin	5x15	
36	Ständer	Stand		0307133836
37	O Ring	O-ring	28x1,8	
38	Lager	Bearing	6001	0406001
39	Innensechskantschraube	Socket head cap screws	M6x25	
40	Innensechskantschraube	Socket head cap screws		
41	Rotor	Rotor		0307133841
42	Luftleitring	Air conducting ring	40	0307133842
43	Innensechskantschraube	Socket head cap screws		
44	Abdeckplatte	Cover plate		
45	Buchse	Bushing	5x22	0307133845
48	Zahnrad	Gear		0307133848
49	Passfeder	Key	4x10	042P4410
50	Lagerbuchse	Bushing bearing		0307133850
51	Dorn	Arbor		0307133851
52	Lager	Bearing	12x16x16	0307133852
53	Lager	Bearing	LFB6905	0406905R
54	Zahnrad	Gear		0307133854
55	Passfeder	Key	12x8x7	
56	Spindel	Spindle		0307133856
57	Lager	Bearing	LFB6005	0406005R
58	Lagerdeckel	Bearing cover		0307133858
59	Blechschraube	Tapping screw	M4x65	
60	Stator	Stator		0307133860
61	Lager	Bearing	NSK608	040608R
62	Lagerdeckel	Bearing cover		03073038162
63	Typenschild	Nameplate		
64	Motorgehäuse	Motor housing		0307133864
65	Halter Kohlebürste	Brush holder		03071050140
66	Sicherungsring	Circlip		
67	Kohlebürste	Carbon brush		03071050141
68	Kupferschraube	Copper screw	M4x8	
69	Kreuzschlitzschraube	Cross screw	M4x12	
70	Gehäuseschraube	Casing screw	M5x40	
71	Zugentlastung	Strain relief	M12x1.5	
72	Gehäuseschraube	Casing screw	M5x45	
73	Abdeckung	Cover		03071236150
74	Anschlusskabel	Connecting lead		
75	Sicherungsring, außen	Circle,outer		
76	Kabel	Cable		
77	Sicherungsring, außen	Circle,outer	8	042SR8W
78	Sicherungsring, außen	Circle,outer	8	042SR8W
79	Sicherungsring, außen	Circle,outer	8	042SR8W
80	Kabel	Cable		
81	Kreuzschlitzschraube	Cross screw	M3x6	
82	Schalter	Switch		03071050236
83	Schalter	Switch		03071550230
84	Schaltertafel	Switch panel		0307133884
85	Brückengleichrichter	Bridge rectifier		0307133885
86	Innensechskantschraube	Socket head cap screws	M5x10	
87	Schaltkasten	Switch box		0307133887
88	Magnet	Magnet		0307133888
K	Transportkoffer	Transport case		03071338K

8.5.2 Schaltplan - Wiring diagram



8.6 DM50

8.6.1 Bohrkopf- Drilling head - DM50

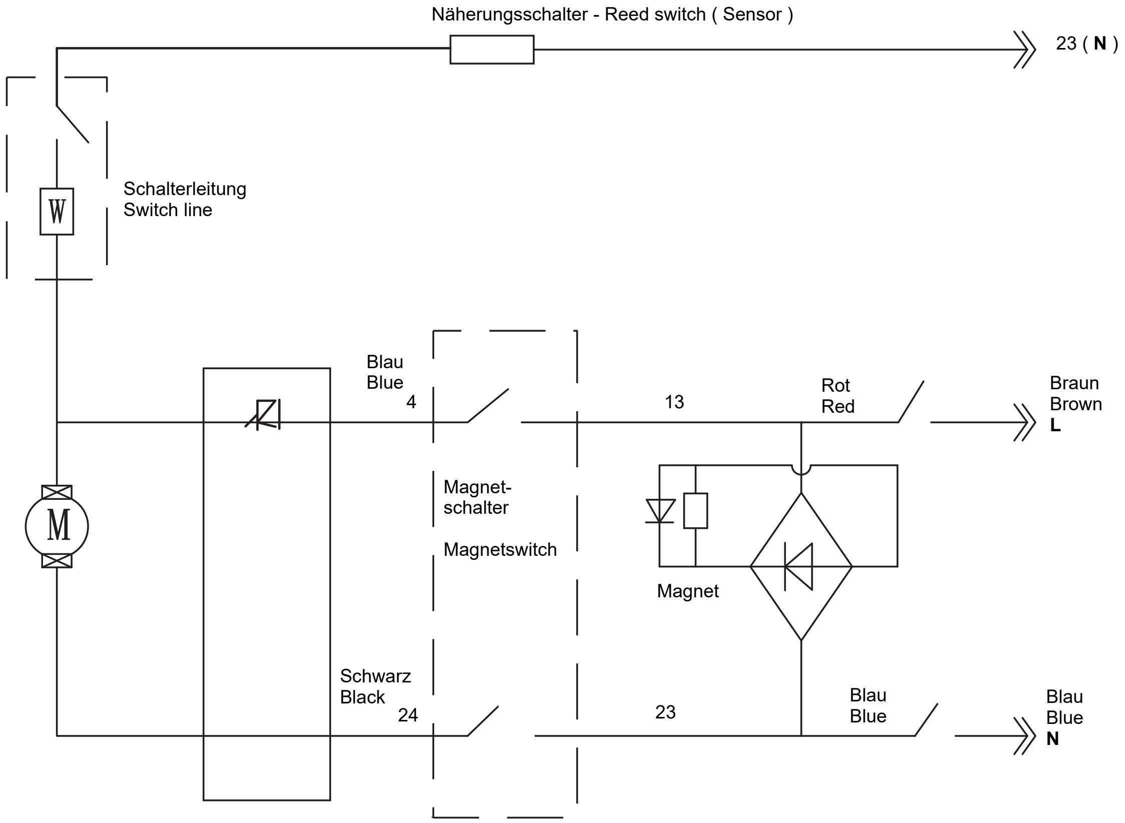


8-8: Bohrkopf - Drilling head - DM50

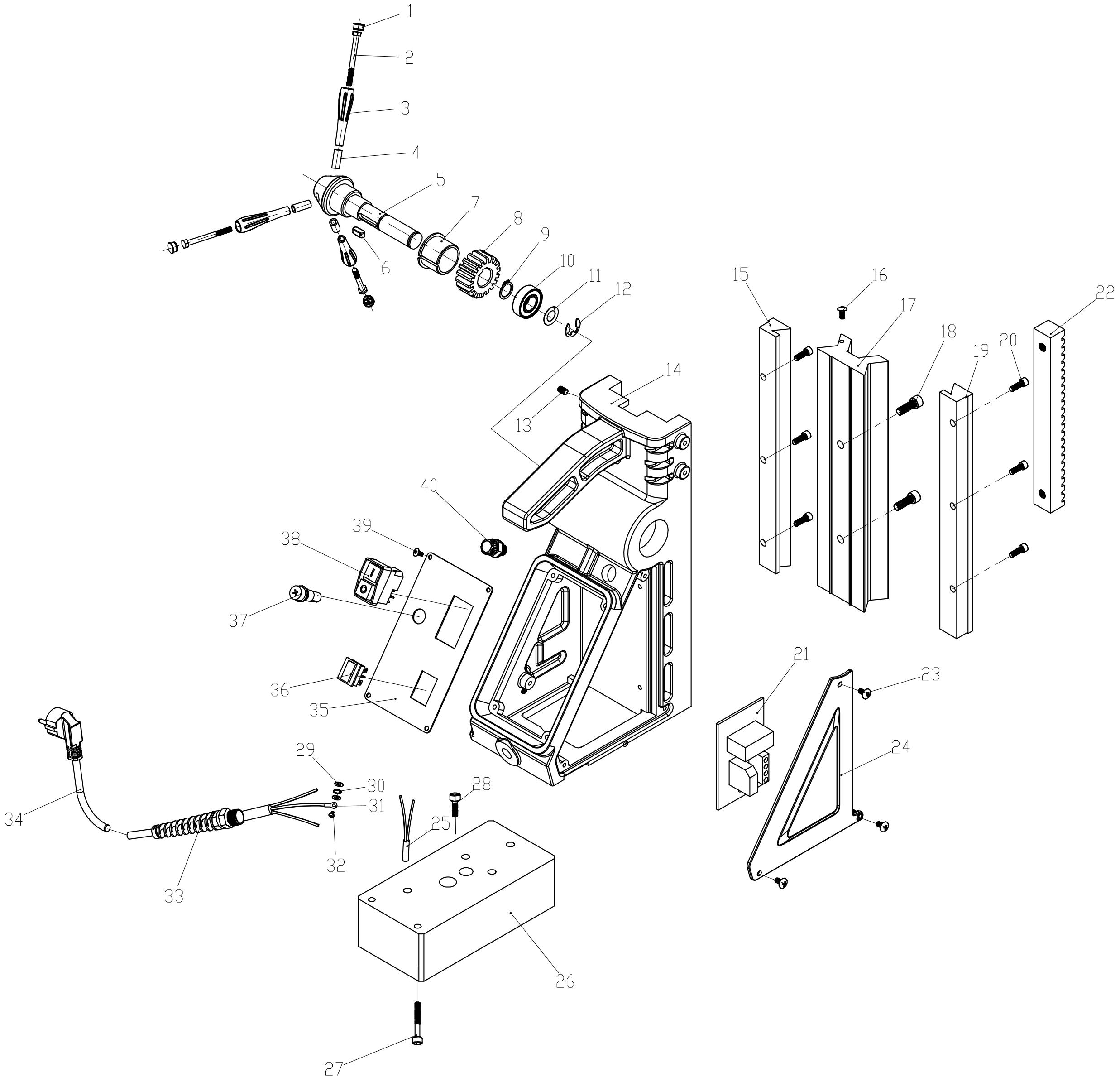
Ersatzteilliste Bohrkopf - Spare part list drilling head - DM50

Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.
1	Sicherungsring, innen	Circlip, inner	19	042SR19W
2	Dichtung	Gasket	9.4x18.5x2	
3	Polyurethanscheibe	PU washer		
4	Stift für Feder	Pin for spring	8.5x11.5x12	03071050104
5	Feder	Spring	11.5x107	03071050105
6	Sicherungsring, innen	Circlip, inner	33	
7	Ring	Ring	33x48x1	
8	Pressspannscheibe	Pressboard washer	10x3.1	
9	Kühlwasserring	Coolant water ring		
10	Spindel	Spindle		03071050110
11	Lager	Bearing	61904	04061904R
12	Gehäuseschraube	Casing screw	M5x70	
13	Stift	Pin	4x12	
14	Lager	Bearing	61904	04061904R
15	Zahnrad	Gear		03071050115
16	Sicherungsring, außen	Circlip, outer	20	042SR20W
17	O Ring	O ring	77x2	
18	Stiftschraube	Set screw	M10x10	
19	Stift	Pin	6x10	
20	Getriebedeckel	Gear cover		03071050120
21	Wellendichtring	Shaft sealing ring	10x16x4	
22	O Ring	O ring	25.8x1.8	
23	Wellendichtring	Shaft sealing ring	20x32x7	04120327
24	Schraube	Screw	M8x50	
25	Schwalbenschwanznut - Stahl	Dovetail groove - steel	40	03071050125
26	Getriebegehäuse	Gear box		03071050126
27	Lager	Bearing	608	040608R
28	Rotorritzel	Rotor pinion		03071050128
29	Passfeder	Key	3x9	042P3310
30	Rotor Zahnrad	Rotor gear		03071050130
31	Lager	Bearing	608	040608R
32	Lager	Bearing	6000	0406000R
33	Rotor	Rotor		03071050133
34	Lager	Bearing	608	040608R
35	Luftleitring	Air conducting ring		03071050135
36	Blechschraube	Tapping screw	M4x65	
37	Stator	Stator	M4	03071050137
38	Motorgehäuse	Motor housing	M4	03071050138
39	Typenschild	Nameplate		
40	Halter Kohlebürste	Brush bracket		03071050140
41	Kohlebürste	Carbon brush	49.5x25.5	03071050141
42	Bürstenfeder	Brush spring		03071050142
43	Schraube	Screw	M4x8	
44	Schraube	Screw	M4x12	
45	Abdeckung	Cover	M4x8	
46	Gehäuseschraube	Casing screw	M5x45	
47	Zugentlastung	Strain relief	M12x1.5	
48	Gehäuseschraube	Casing screw	M5x40	
49	Kabelschutz	Cable protection		
51	Spindel komplett	Spindle complete		03071050151
52	Getriebe komplett	Gear complete		03071050152
53	Motor komplett	Motor complete		03071050153
K	Transportkoffer	Transport case		03071050K

8.6.2 Schaltplan - Wiring diagram



8.6.3 Magnetstand - Magnetic stand



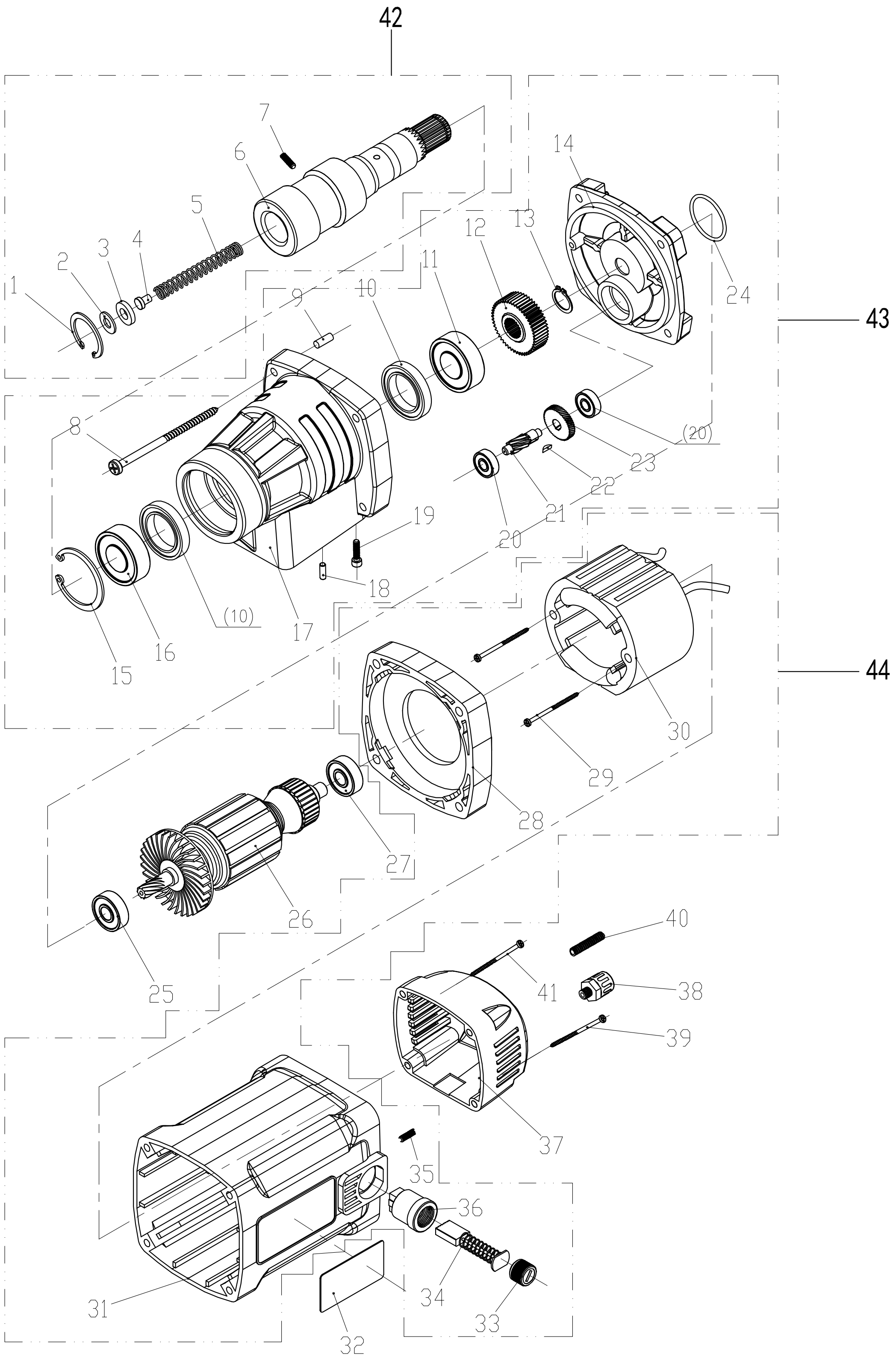
8-9: Magnetstand - Magnetic stand - DM50

Ersatzteilliste Magnetstand- Spare part list magnetic stand - DM50				
Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.
1	Anschlag	Stopper		03071050203CPL
2	Screw	Screw	M10x110	
3	Griff	Handle		
4	Stahlring	Steel ring	10.5x16x38	03071050204
5	Vorschubwelle	Feed shaft		03071050205
6	Stift	Pin	6x6x12	
7	Kupferring	Copper ring	25x30	03071035207
8	Vorschubzahnrad	Feed gear	18x44x16	03071050208
9	Sicherungsring	Circlip	18	042SR18W

10	Lager	Bearing	61903	04061903R
11	Dichtung	Gasket	17x30x0.5	
12	Sicherungsring	Circlip	15	042SR15W
13	Schraube	Screw	M5x12	
14	Ständer	Stand		
15	Linke Führungsschiene	Left rail track bar	17x230	
16	Schraube	Screw	M5x8	
17	Schwalbenschwanzführung	Dovetail groove guide rail		
18	Schraube	Screw	M6x16	
19	Rechte Führungsschiene	Right rail track bar	17x230	
20	Schraube	Screw	M4x20	
21	Leiterplatte	Circuit board		03071050221
22	Zahnstange	Toothed rack	10x16x180	
23	Schraube	Screw	M4*6	
24	Dreiecksplatte	Triangle plate		
25	Näherungsschalter	Reed switch		03071050225
26	Magnet	Magnet		03071050226
27	Schraube	Screw	M6x55	
28	Schraube	Screw	M6x20	
29	Flachdichtung	Flat gasket	4	
30	Dichtung	Gasket	4	
31	Verbindung	Joint		
32	Schraube	Screw	M4x8	
33	Knickschutz	Kink protection	M12x1.5	
34	Anschlusskabel	Connecting lead		
35	Schaltertafel	Switch plate		03071050235
36	Schalter	Switch		03071050236
37	Sicherung	Fuse		03071050237
38	Schalter	Switch		03071050238
39	Schraube	Screw	M3x6	
40	Zugentlastung	Strain relief		

8.7 DM50V

8.7.1 Bohrkopf- Drilling head

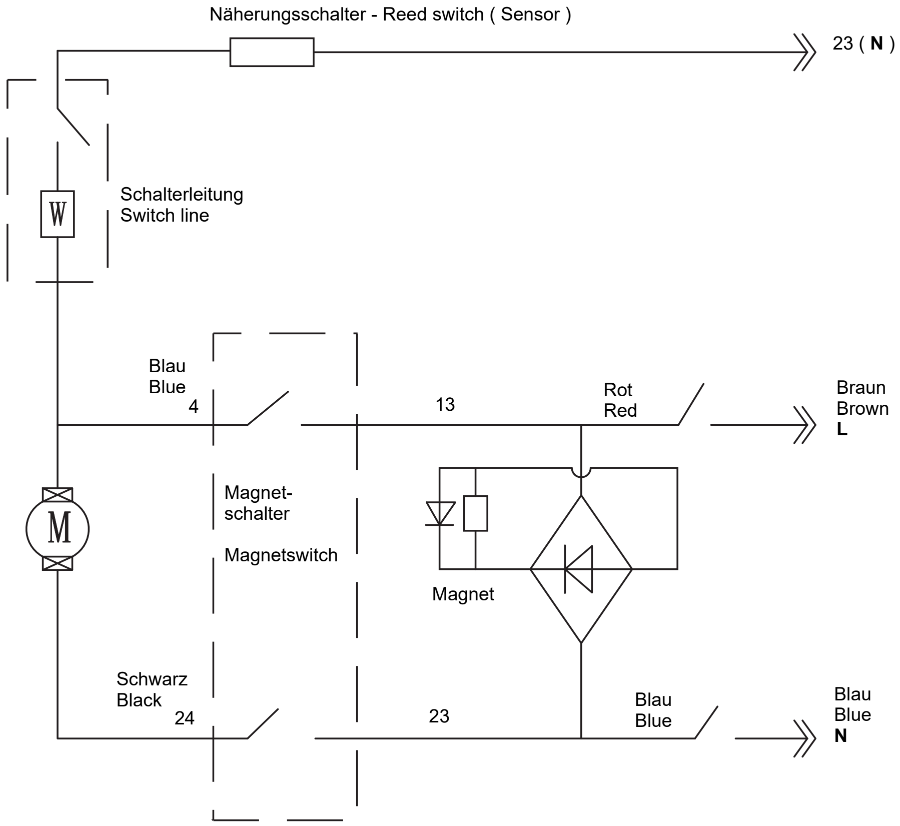


8-10: Bohrkopf - Drilling head - DM50V

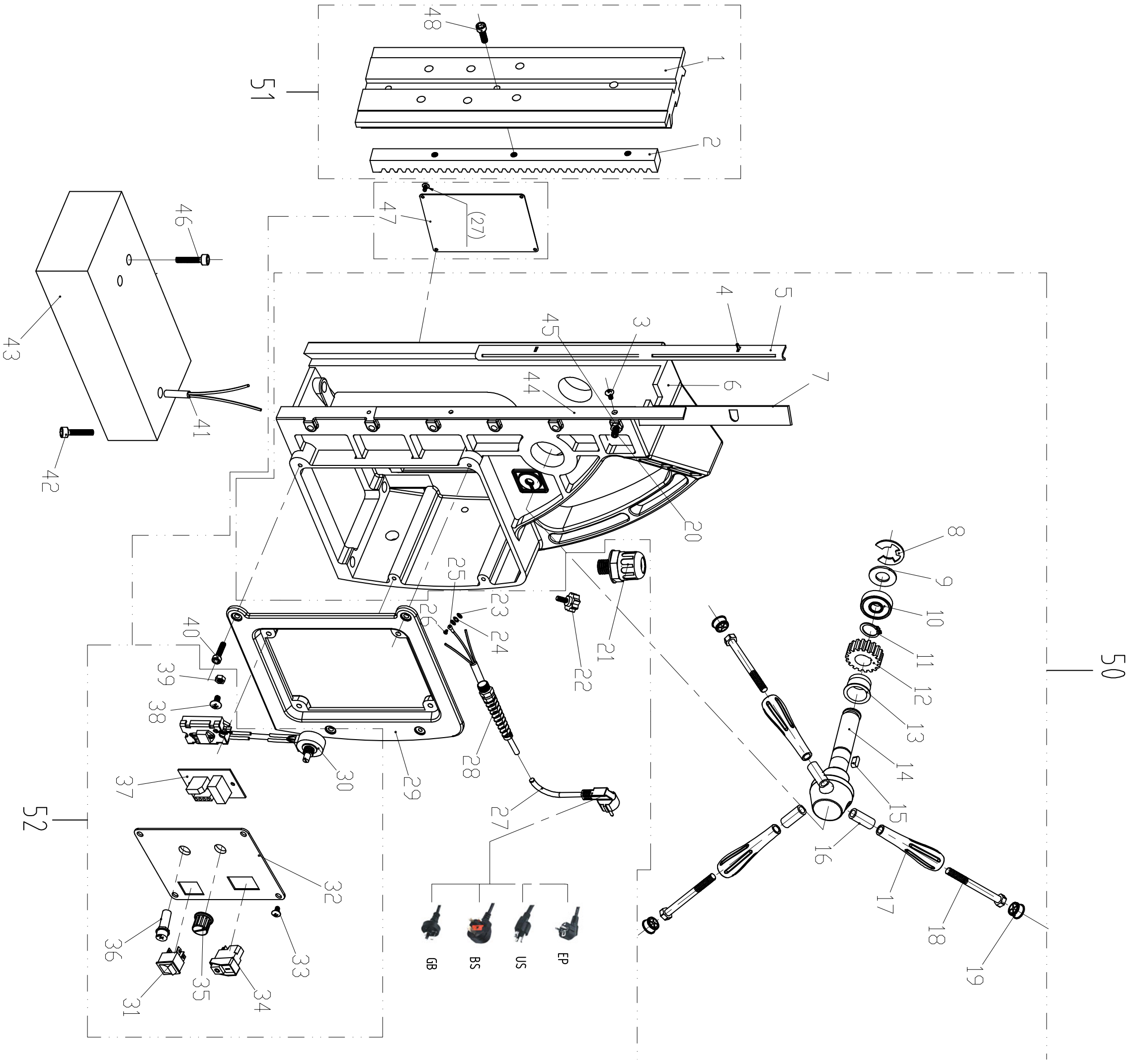
Ersatzteilliste Bohrkopf - Spare part list drilling head - DM50V

Pos.	**Bezeichnung**	**Description**	**Größe**	**Art. nummer**	**Pos.**	**Bezeichnung**	**Description**	**Größe**	**Art. nummer**
			Size	**Item no.**				**Size**	**Item no.**
1	Sicherungsring, innen	Circlip, inner	19mm	042SR19W	25	Lager	Bearing	6000	0406000R
2	Dichtung	Gasket	9x19x2		26	Rotor	Rotor		03071150126
3	Polyurethanscheibe	PU washer	9.5x19		27	Lager	Bearing	608	040608R
4	Stift für Feder	Pin for spring	10.3x12	03071150104	28	Luftleitring	Air conducting ring		03071150128
5	Feder	Spring	10x95	03071550105	29	Schraube	Screw	M4x65	
6	Spindel	Spindle		03071150106	30	Stator	Stator		03071150130
7	Stiftschraube	Set screw	M10x12		31	Motorgehäuse	Motor housing		03071150131
8	Gehäuseschraube	Casing screw	M5x55		32	Typenschild	Nameplate		
9	Stift	Pin	4x12		33	Abdeckung Kohlebürste	Brush cover		03071150133
10	Wellendichtring	Shaft sealing ring	22x32x7	04122327	34	Kohlebürste	Carbon brush		03071150134
11	Lager	Bearing	JVB6904	0409604R	35	Schraube	Screw	M5x8	
12	Zahnrad	Gear		03071150112	36	Halter Kohlebürste	Brush holder		03071150136
13	Sicherungsring, außen	Circlip, outer	17	042SR17W	37	Motorabdeckung	Motor cover		03071150137
14	Getriebedeckel	Gear cover		03071150114	38	Zugentlastung	Strain relief	M12x1.5	
15	Sicherungsring, innen	Circlip, inner	42	042SR42W	39	Gehäuseschraube	Casing screw	M5x30	
16	Lager	Bearing	JVB6905	0406905R	40	Kabelschutz	Cable protection		
17	Getriebegehäuse	Gear box		03071150117	41	Schraube	Screw	M5x45	
18	Stift	Pin	5x15		42	Spindel komplett	Spindle complete		03071150142
19	Innensechskantschraube	Socket head cap screws	M5x20		43	Getriebe komplett	Gear complete		03071150143
20	Lager	Bearing	LFB608	040608R	44	Motor komplett	Motor complete		03071150144
21	Rotorritzel	Rotor pinion	45x16.8	03071150121	K	Transportkoffer	Transport Case		03071150K
22	Passfeder	Key	9x3x4						
23	Rotor Zahnrad	Rotor gear	38.4*11*11	03071150123					
24	Pressspannscheibe	Pressboard washer	25.8x1.8						

8.7.2 Schaltplan - Wiring diagram



8.7.3 Magnetstand - Magnetic stand



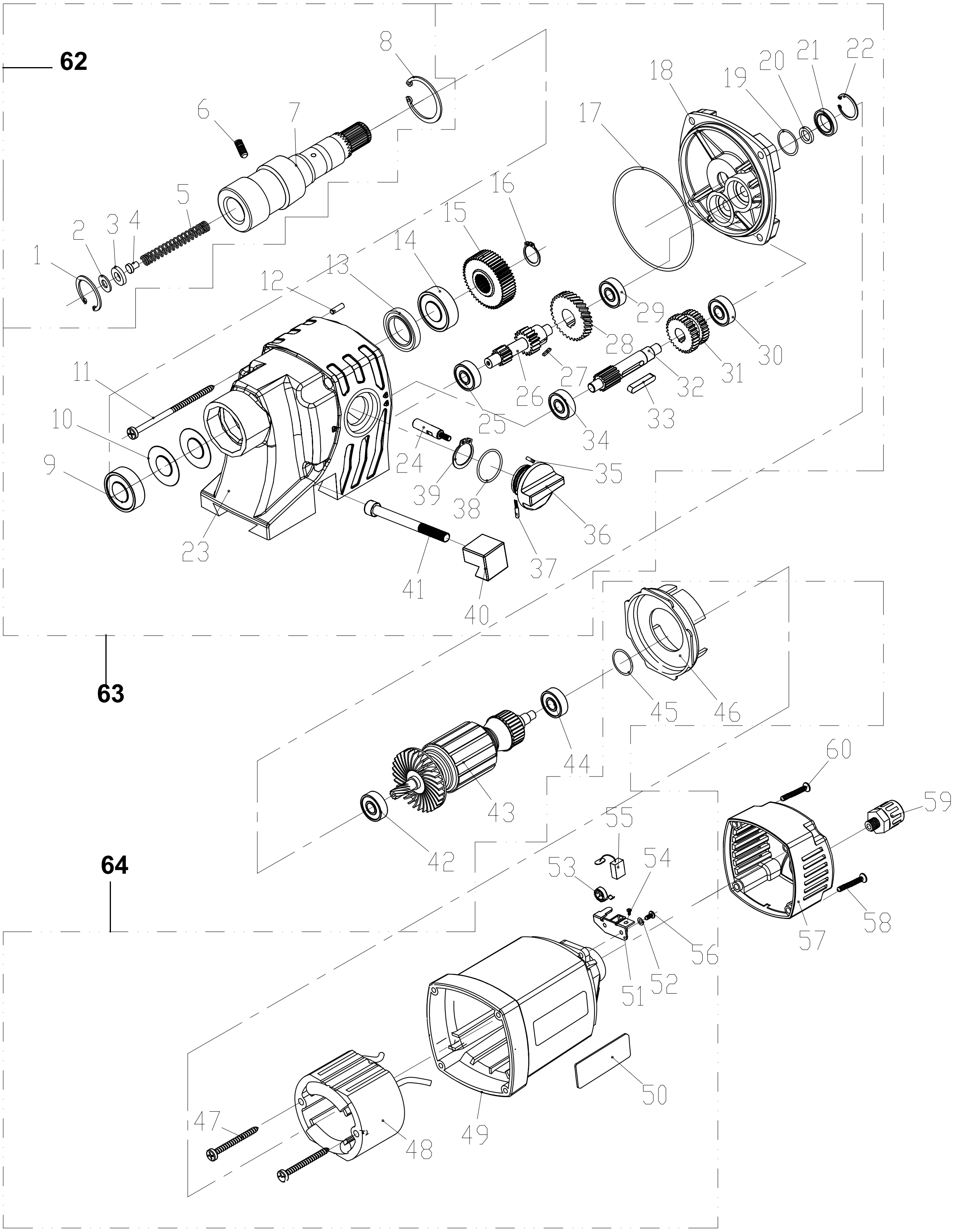
8-11: Magnetstand - Magnetic stand-DM50V

Ersatzteilliste Magnetstand- Spare part list magnetic stand - DM50V									
Pos.	Bezeichnung	Description	Größe	Art. nummer	Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.				Size	Item no.
1	Schiebeschlitten	Sliding carriage	180x80		28	Knickschutz	Kink protection	M12x1.5	
2	Zahnstange	Toothed rack	10x16x180		29	Einbaurahmen	Panel frame		
3	Kreuzschlitzschraube	Cross screw	M3x8		30	Drehzahlregler	Speed controller		03071150230
4	Spannstift	Dowel Pin	3x8		31	Schalter	Switch		03071050236
5	Führungsstreifen	Guide strip	1,5x230		32	Schalterplatte	Switch panel	86x116	03071150232
6	Ständer	Stand			33	Rostfreie Schraube	Stainless screw	M3x6	
7	Einstellbare Platte	Adjustable plate	3x12x230		34	Schalter	Switch		03071050238
8	Sicherungsring	E-Circlip	15	042SR15W	35	Drehzahlschalter	Speed switch		03071550231
9	Lagerdeckel	Bearing cover			36	Sicherung	Fuse	5A L , 250V	03071150236
10	Lager	Bearing	JVB6903	0406903R	37	Leiterplatte	Circuit Board		03071150237
11	Sicherungsring, außen	Circlip, outer	18	042SR18W	38	Schraube	Screw	M4x15	
12	Vorschubzahnrad	Feed gear		0307150208	39	Mutter	Nut	M4	

13	Lager	Bearing	25x30x50	
14	Vorschubwelle	Feed shaft		
15	Passfeder	Key	5x14	042P5516
16	Griffhülse	Handle sleeve	10.5x16x38	
17	Griff	Handle		
18	Schraube	Screw	M10x150	
19	Anschlag	Stopper		
20	Schraube	Screw	M5x20	
21	Zugentlastung	Strain relief	M12x1.5	
22	Schraube	Screw	M5x12	
23	Flachdichtung	Flat seal	4	
24	Dichtung	Gasket	4	
25	Verbindung	Joint		
26	Schraube	Screw	M4x8	
27	Anschlusskabel	Connecting lead		
40	Schraube	Screw	4x10	
41	Näherungsschalter	Reed switch		03071150241
42	Schraube	Screw	M6x55	
43	Magnet	Magnet		03071050226
44	Druckleiste	Pressure bar	1,5x11x230	
45	Mutter	Nut	M5	
46	Schraube	Screw	M6x20	
47	Rückwand	Back panel		
48	Schraube	Screw	M6x16	
50	Bohrständer mit Vorschubhebel komplett	Drill stand with feed lever complete		
51	Gleitschlitten komplett	Sliding carriage complete		
52	Schalterplatte komplett	Switch plate complete		

8.8 DM50PM

8.8.1 Bohrkopf- Drilling head

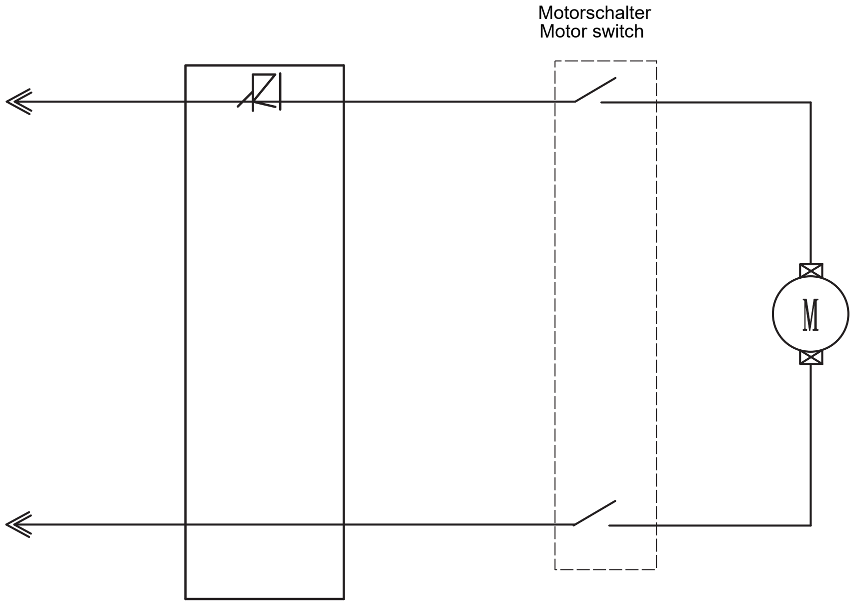


8-12: Bohrkopf - Drilling head - DM50PM

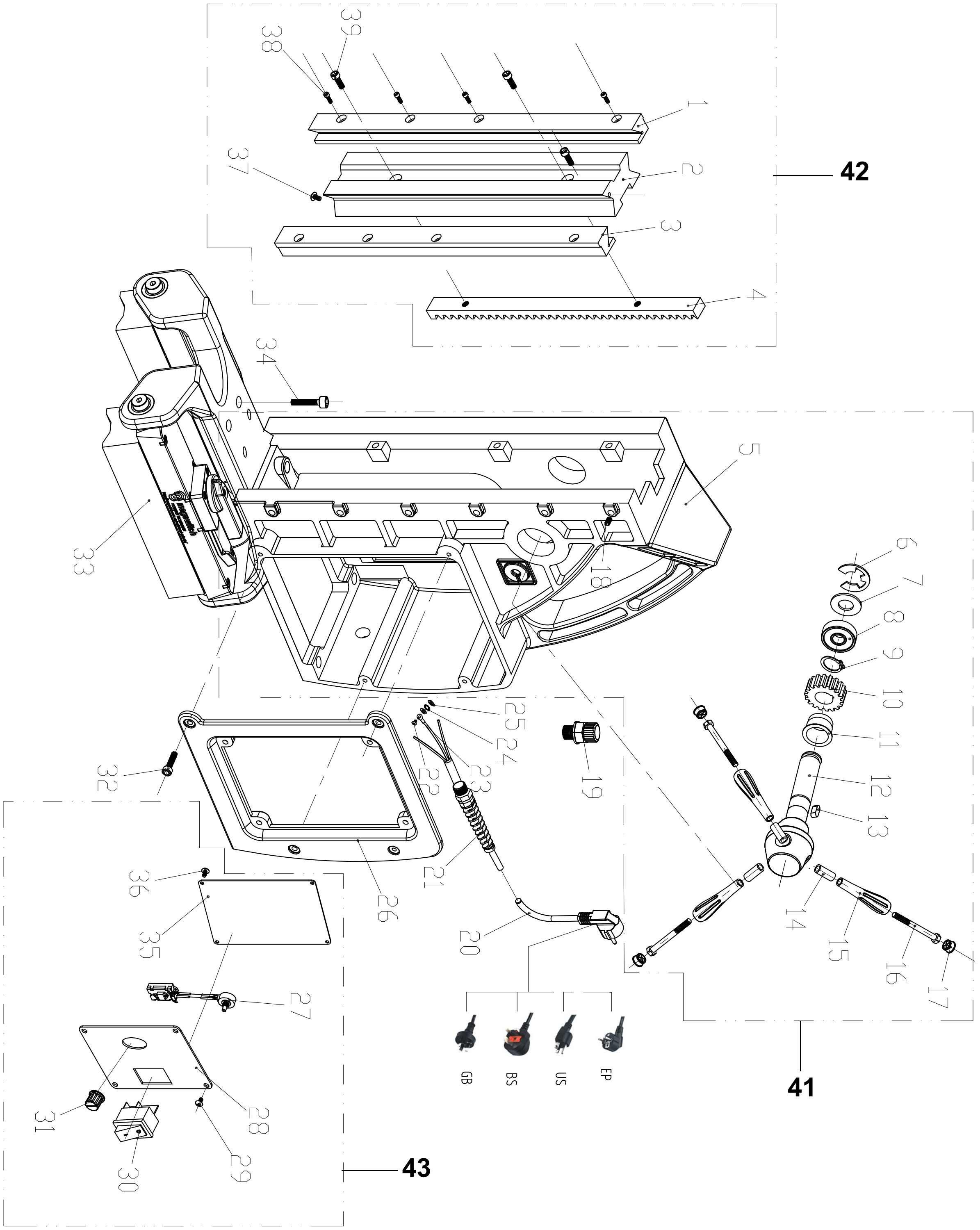
Ersatzteilliste Bohrkopf - Spare part list drilling head - DM50PM

Pos.	Bezeichnung	Description	Größe	Art. nummer	Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.				Size	Item no.
1	Sicherungsring, innen	Circlip, inner	19	042SR19W	40	Schwalbenschwanznut	Dovetail groove	25x25x25	
2	Dichtung	Gasket			41	Schraube	Screw	M8x50	
3	Polyurethanscheibe	PU washer			42	Lager	Bearing	NSK6001	
4	Stift für Feder	Pin for spring		03071550104	43	Rotor	Rotor		03071550143
5	Feder	Spring		03071550105	44	Lager	Bearing	NSK608	
6	Stiftschraube	Set screw	M10x12		45	O Ring	O-ring	22.4x2.65	
7	Spindel	Spindle			46	Luftleitring	Air conducting ring	40	
8	Sicherungsring	Circlip	42	042SR42W	47	Blechschraube	Tapping screw	M4x70	
9	Lager	Bearing	6905	0406905R	48	Stator	Stator		03071550148
10	Dichtung	Gasket	17x30x1		49	Motorgehäuse	Motor housing		03071550149
11	Gehäuseschraube	Casing screw	M5x60		50	Typenschild	Nameplate		
12	Stift	Pin	4x12		51	Halter Kohlebürste	Brush holder	300-2	03071550151
13	Wellendichtring	Shaft sealing ring	20x32x7	04120327	52	Scheibe	Washer	4	
14	Lager	Bearing	16904		53	Sicherungsring	Circlip	40	
15	Zahnrad	Gear		03071550115	54	Schraube	Screw	M4x8	
16	Sicherungsring, innen	Circlip, inner	16		55	Kohlebürste	Carbon brush	40	03071550155
17	O Ring	O ring	92x2		56	Kreuzschlitzschraube	Cross Screw	M4x12	
18	Getriebedeckel	Gear cover	40		57	Motordeckel	Motor cover	40	03071550157
19	O Ring	O-ring	28x1,8		58	Gehäuseschraube	Casing screw	M5x40	
20	Stahlring	Steel ring	15x30x27		59	Zugentlastung	Strain relief	M12x1.2	
21	Wellendichtring	Shaft sealing ring	15x21x3		60	Gehäuseschraube	Casing screw	M5x45	
22	Sicherungsring, außen	Circlip, outer	27		62	Spindel komplett	Spindle complete		03071550161
23	Getriebegehäuse	Gearbox	40		63	Getriebe mit Spindel komplett	Gear with spindle complete		
24	Schaltstange	Selector rod			64	Motor komplett	Motor complete		03071550163
25	Lager	Bearing	LFB608		K	Transportkoffer	Transport case		03071550K
26	Rotor Getriebewelle	Rotor gear shaft		03071550126					
27	Passfeder	Key	4x6						
28	Rotor Zahnrad	Rotor gear		03071550128					
29	Lager	Bearing	LFB608						
30	Lager	Bearing	LFB609						
31	Rotorritzel	Rotor pinion		03071550131					
32	Rotorzahnwelle	Rotor toothed shaft		03071550132					
33	Passfeder	Key	5x30						
34	Lager	Bearing	LFB608						
35	Stift	Pin	3x9						
36	Getriebeschalter	Gear switch		03071550136					
37	Spannstift	Dowel pin	4x15						
38	O Ring	O-ring	22.4x2.65						
39	Sicherungsring, innen	Circlip, inner	26						

8.8.2 Schaltplan - Wiring diagram



8.8.3 Magnetstand - Magnetic stand



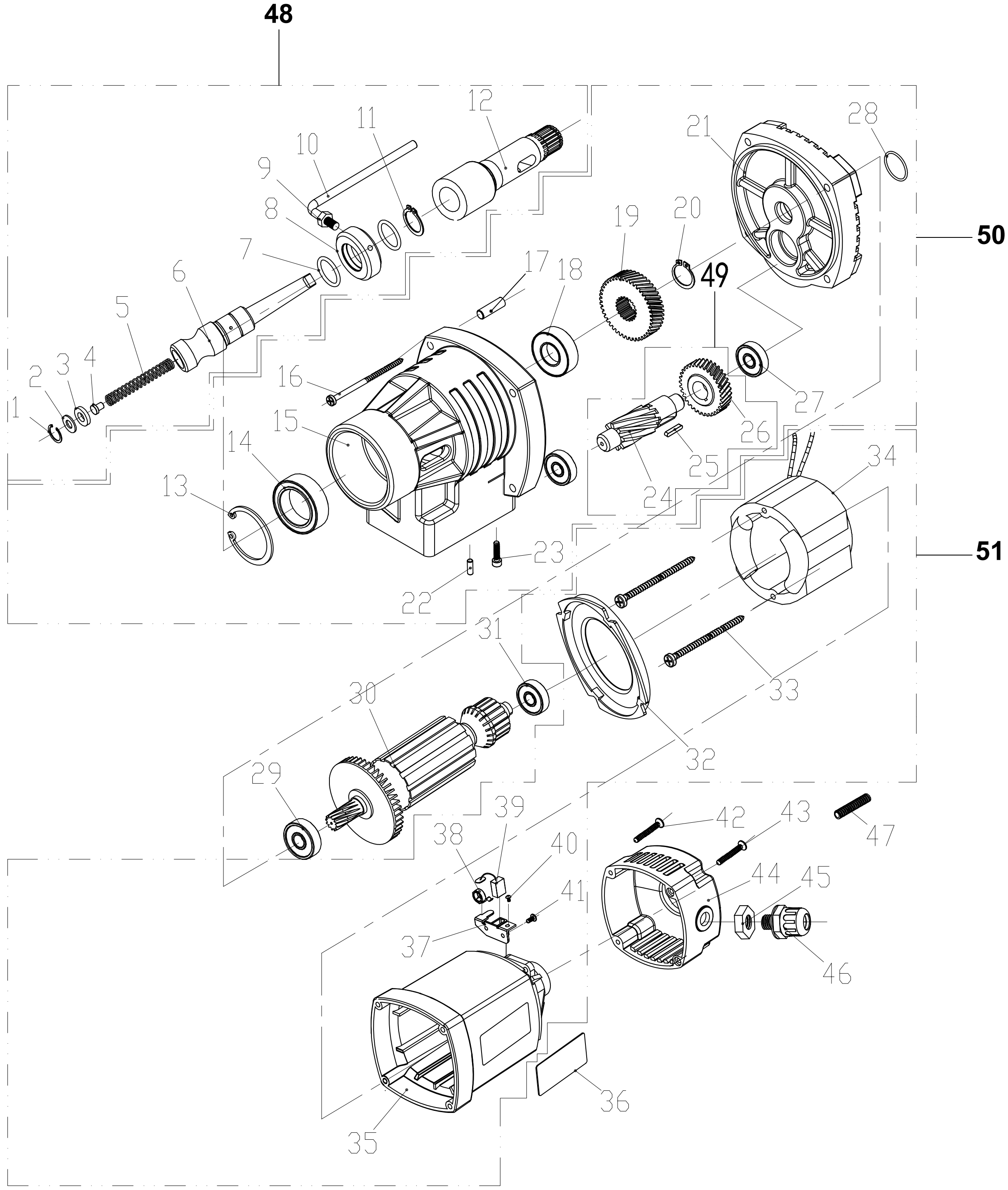
Magnetstand - Magnetic stand - DM50PM

Ersatzteilliste Magnetstand- Spare part list magnetic stand - DM50PM

Pos.	Bezeichnung	Description	Größe	Art. nummer	Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.				Size	Item no.
1	Linke Führungsschiene	Left rail track bar	17x230		25	Flachdichtung	Flat seal		
2	Schwalbenschwanzführung	Dovetail groove guide rail			26	Einbaurahmen	Panel frame		
3	Rechte Führungsschiene	Right rail track bar	17x230		27	Drehzahregler	Speed controller	22	03071550227
4	Zahnstange	Toothed rack	10x16x180		28	Schaltertafel	Switch panel		
5	Ständer	Stand	13		29	Rostfreie Schraube	Stainless screw	M3x6	
6	Sicherungsring	Circlip	15	042SR15W	30	Schalter	Switch		03071550230
7	Rostfreie Scheibe	Stainless washer	17x30x0.5		31	Drehzahlknopf	Speed knob		03071550231
8	Lager	Bearing	6903	0406903	32	Rostfreie Schraube	Stainless screw	M4x10	
9	Sicherungsring, außen	Circlip, outer	18	042SR18W	33	Magnet	Magnet		03071550233
10	Vorschubzahnrad	Feed gear			34	Schraube	Screw	M6x20	
11	Gleitlager	Plain bearing	58x26x30		35	Rückwand	Back panel		
12	Vorschubwelle	Feed shaft			36	Rostfreie Schraube	Stainless screw	M3x20	
13	Passfeder	Key	5x14	042P5516	37	Rostfreie Schraube	Stainless screw	M5x8	
14	Griffhülse	Handle sleeve	10.5x16x38		38	Innensechskantschraube	Socket head cap screws	M4x20	
15	Griff	Handle			39	Innensechskantschraube	Socket head cap screws	M6x16	
16	Schraube	Screw	M10x150		41	Bohrständer mit Vorschubhebel komplett	Drill stand with feed lever complete		
17	Anschlag	Stopper			42	Gleitschlitten komplett	Sliding carriage complete		
18	Innensechskant-schraube	Socket head cap screws	M4x10		43	Schalterplatte komplett	Switch plate complete		
19	Zugentlastung	Strain relief	M12x1.5						
20	Anschlusskabel	Connecting lead							
21	Knickschutz	Kink protection							
22	Schraube	Screw	4						
23	Verbindung	Joint	4						
24	Dichtung	Gasket	13						

8.9 DM60V

8.9.1 Bohrkopf- Drilling head

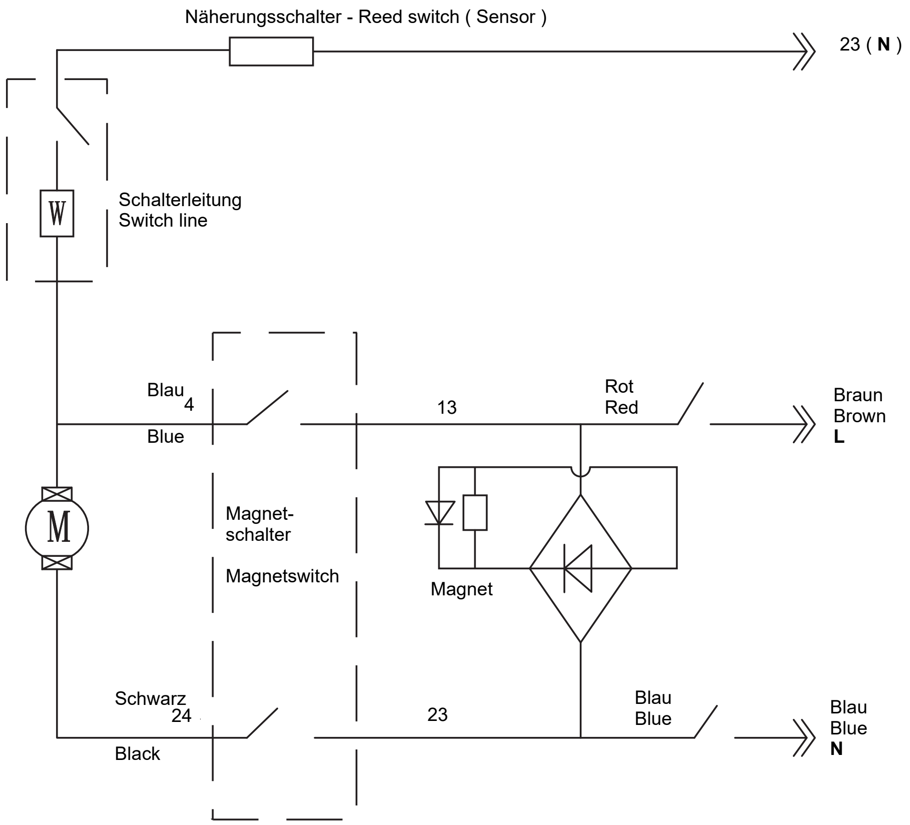


8-13: Bohrkopf - Drilling head - DM60V

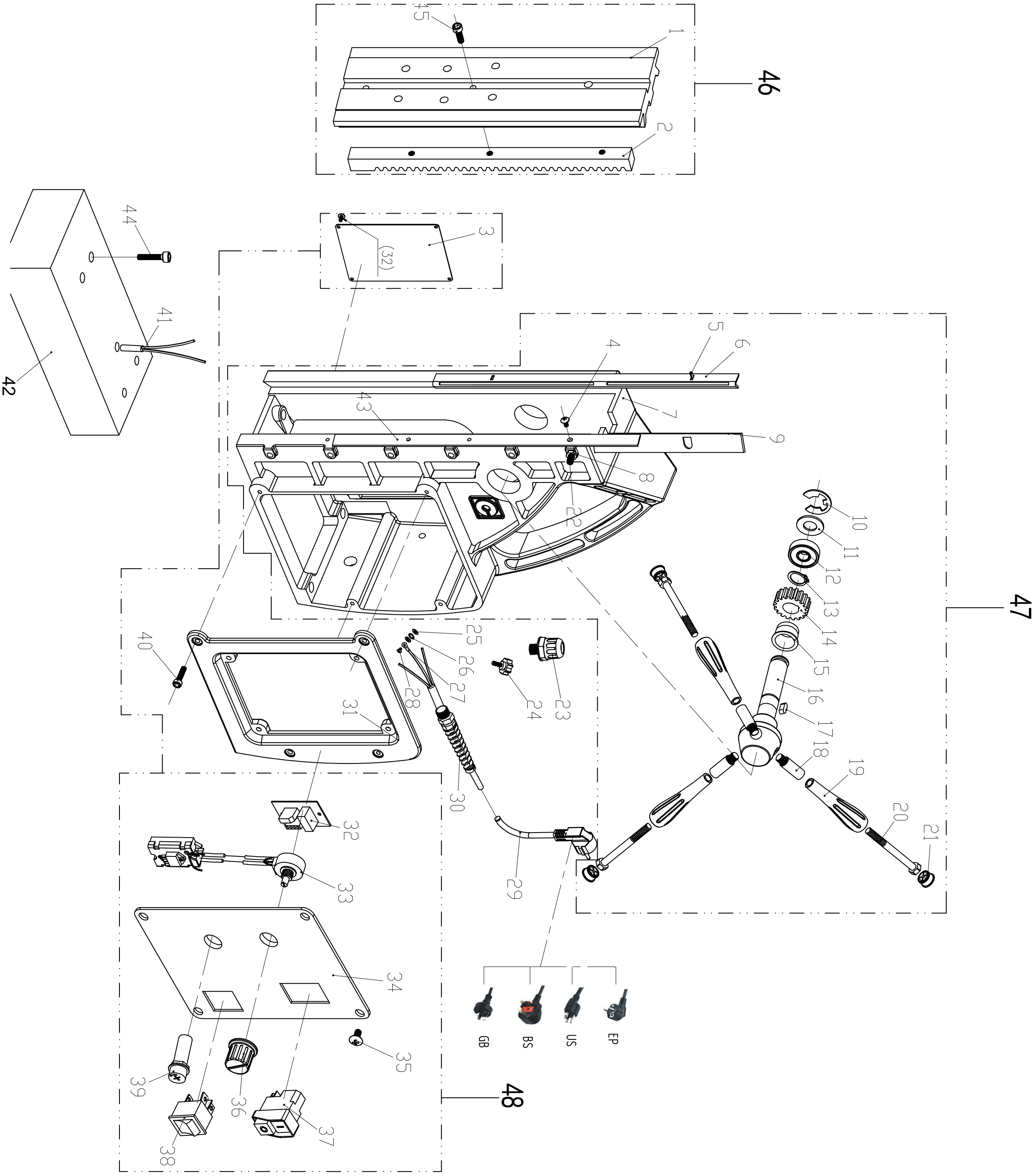
Ersatzteilliste Bohrkopf - Spare part list drilling head - DM60V

Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.
1	Sicherungsring, innen	Circlip, inner	19	042SR19W
2	Rostfreie Dichtung	Stainless gasket	9x19x2	
3	Polyurethanscheibe	PU washer	19x8x5.2	
4	Stift für Feder	Pin for spring	2	
5	Feder	Spring	10x130	
6	Schnellkupplung	Quick coupling	MK2	03071160106
7	O Ring	O-ring	35x3,5	
8	Kühlwasserring	Cooling water ring	28x54x19	03071160108
9	Mutter	Nut	M8	
10	Griff für Wasseranschluss	Handle for water connection	6x30x80	03071160110
11	Sicherungsring, außen	Circlip, outer	26	042SR26W
12	Spindel	Spindle		03071160112
13	Sicherungsring, innen	Circlip, inner	52	042SR52W
14	Lager	Bearing	LFB6205	0406205R
15	Getriebegehäuse	Gear box		03071160115
16	Gehäuseschraube	Casing screw	M5x55	
17	Stift	Pin	4x12	
18	Lager	Bearing	LFB6204	0406204
19	Zahnrad	Gear		03071160119
20	Sicherungsring, außen	Circlip, outer	16	
21	Getriebedeckel	Gear cover		03071160121
22	Stift	Pin	5x15	
23	Innensechskant-schraube	Socket head cap screws	M6x25	
24	Rotorritzel	Rotor pinion		03071160124
25	Passfeder	Key	12x5x4	
26	Rotorzahnrad	Rotor gear		03071160126
27	Lager	Bearing	LFB629	
28	Pressspannscheibe	Pressboard washer	31.5x1.8	
29	Lager	Bearing	6201	0406201R
30	Rotor	Rotor		03071160130
31	Lager	Bearing	6200	0406200R
32	Luftleitring	Air conducting ring		03071160132
33	Blechschraube	Tapping screw	M5x70	
34	Stator	Stator		03071160134
35	Motorgehäuse	Motor housing		03071160135
36	Typenschild	Nameplate		
37	Halter Kohlebürste	Brush bracket		03071160137
38	Sicherungsring	Circlip	19	042SR19W
39	Kohlebürste	Carbon brush	19	03071160139
40	Schraube	Screw	M4x6	
41	Schraube	Screw	M4x12	
42	Gehäuseschraube	Casing screw	M4x35	
43	Gehäuseschraube	Casing screw	M4x40	
44	Motorabdeckung	Motor cover		03071160144
45	Mutter Zugentlastung	Strain relief nut	M12	
46	Zugentlastung	Strain relief	M16x1,5	
47	Kabelschutz	Cable protection		
48	Spindel komplett	Spindle complete		03071160148
49	Rotorzahnwelle komplett	Rotor toothed shaft complete		03071160149
50	Getriebe komplett	Gear complete		03071160150
51	Motor komplett	Motor complete		03071160151
K	Transportkoffer	Transport case		03071160K

8.9.2 Schaltplan - Wiring diagram



8.9.3 Magnetstand - Magnetic stand



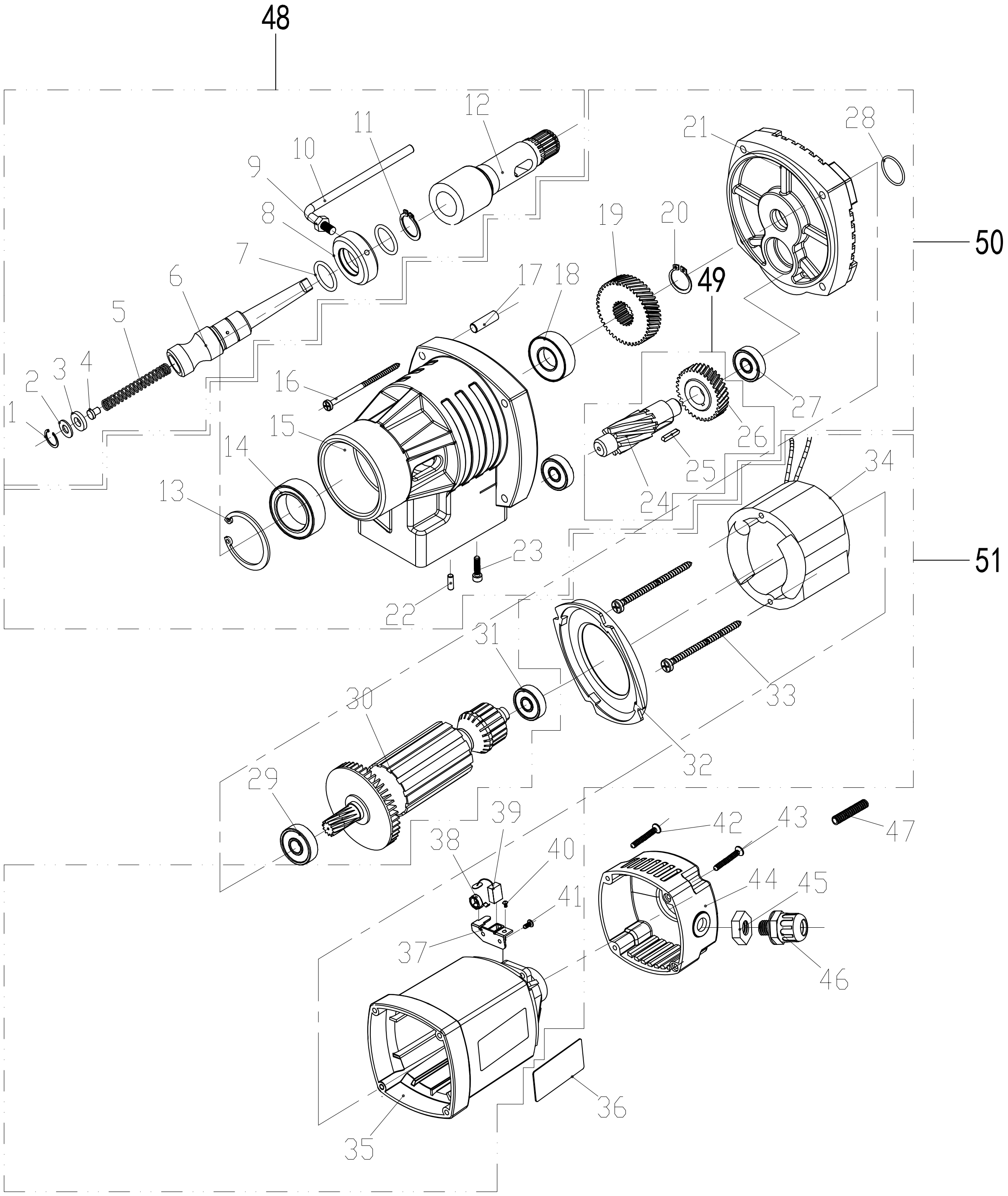
8-14: Magnetstand - Magnetic stand - DM60V

Ersatzteilliste Magnetstand- Spare part list magnetic stand - DM60V

Pos.	Bezeichnung	Description	Größe	Art. nummer	Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.				Size	Item no.
1	Schiebe- schlitten	Sliding carriage	270x88		25	Dichtung	Gasket	4	
2	Zahnstange	Toothed rack	14x14x250		26	Dichtung	Gasket	4	
3	Rückwand	Back panel		03071160203	27	Verbindung	Joint		
4	Kreuzschlitzschraube	Cross screw	M3x8		28	Schraube	Screw	M4x8	
5	Spannstift	Dowel Pin	3x8		29	Anschlusskabel	Connecting lead	3x1.0x2.5	
6	Führungs- streifen	Guide strip	1.5x310		30	Knickschutz	Kink protection	M12x1.5	
7	Ständer	Stand			31	Einbaurahmen	Panel frame		
8	Mutter	Nut	M5		32	Leiterplatte	Circuit board		03071160232
9	Einstellbare Platte	Adjustable plate	3x12x310	03071160209	33	Drehzahlregler	Speed controller		03071160233
10	Sicherungssring	Circlip	15	042SR15W	34	Schaltertafel	Switch panel		03071160234
11	Dichtung	Gasket	17x30x0.5		35	Rostfreie Schraube	Stainless screw	M3x6	
12	Lager	Bearing			36	Drehzahlknopf	Speed knob		03071550231
13	Sicherungsring, außen	Circlip, outer	18	042SR18W	37	Schalter	Switch		03071550230
14	Vorschubzahnrad	Feed gear		03071160214	38	Schalter	Switch		03071160238
15	Kupferbuchse	Copper bush	58x26x30	03071160215	39	Sicherung	Fuse		03071160239
16	Vorschubwelle	Feed shaft		03071160216	40	Innensechskantschraube	Socket head cap screws	M4x10	
17	Stift 5x14	Pin 5x14	5x14		41	Näherungsschalter	Reed switch		03071160241
18	Griffhülse	Handle sleeve	10x16x50	03071160218	42	Magnet	Magnet		03071160242
19	Plastikgriff	Plastic handle		03071160219	43	Druckleiste	Pressure bar	1.5x11x310	03071160243
20	Schraube	Screw	M10x110		44	Sechskant-schraube	Hex. socket screws M6x18	M8x22	
21	Anschlag	Stopper			45	Sechskantschraube	Hex. socket screws M6x18	M6x18	
22	Innensechskantschraube	Socket head cap screws	M5x22		46	Gleitschlitten komplett	Sliding carriage complete		
23	Zugentlastung	Strain relief	M16x1.5		47	Bohrständer mit Vorschubhebel komplett	Drill stand with feed lever complete		
24	Bakelit-Kugelschraube	Bakelite ball screw	M5x12		48	Schaltertafel komplett	Switch panel complete		

8.10 DM98V

8.10.1 Bohrkopf- Drilling head



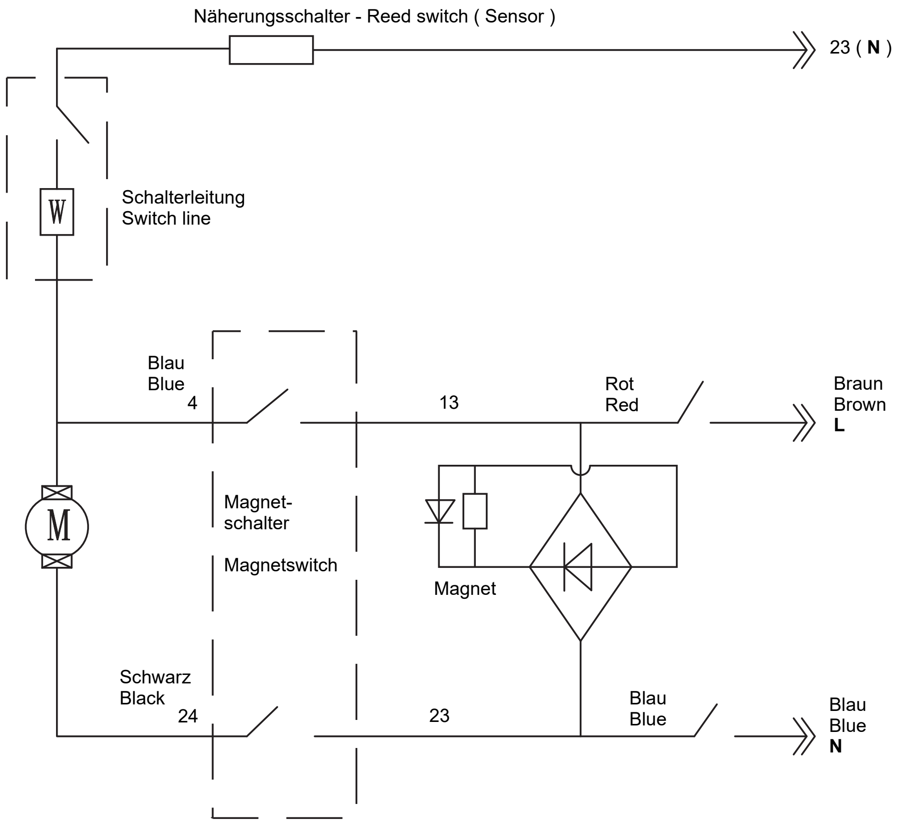
8-15: Bohrkopf - Drilling head - DM98V

Ersatzteilliste Bohrkopf - Spare part list drilling head - DM98V

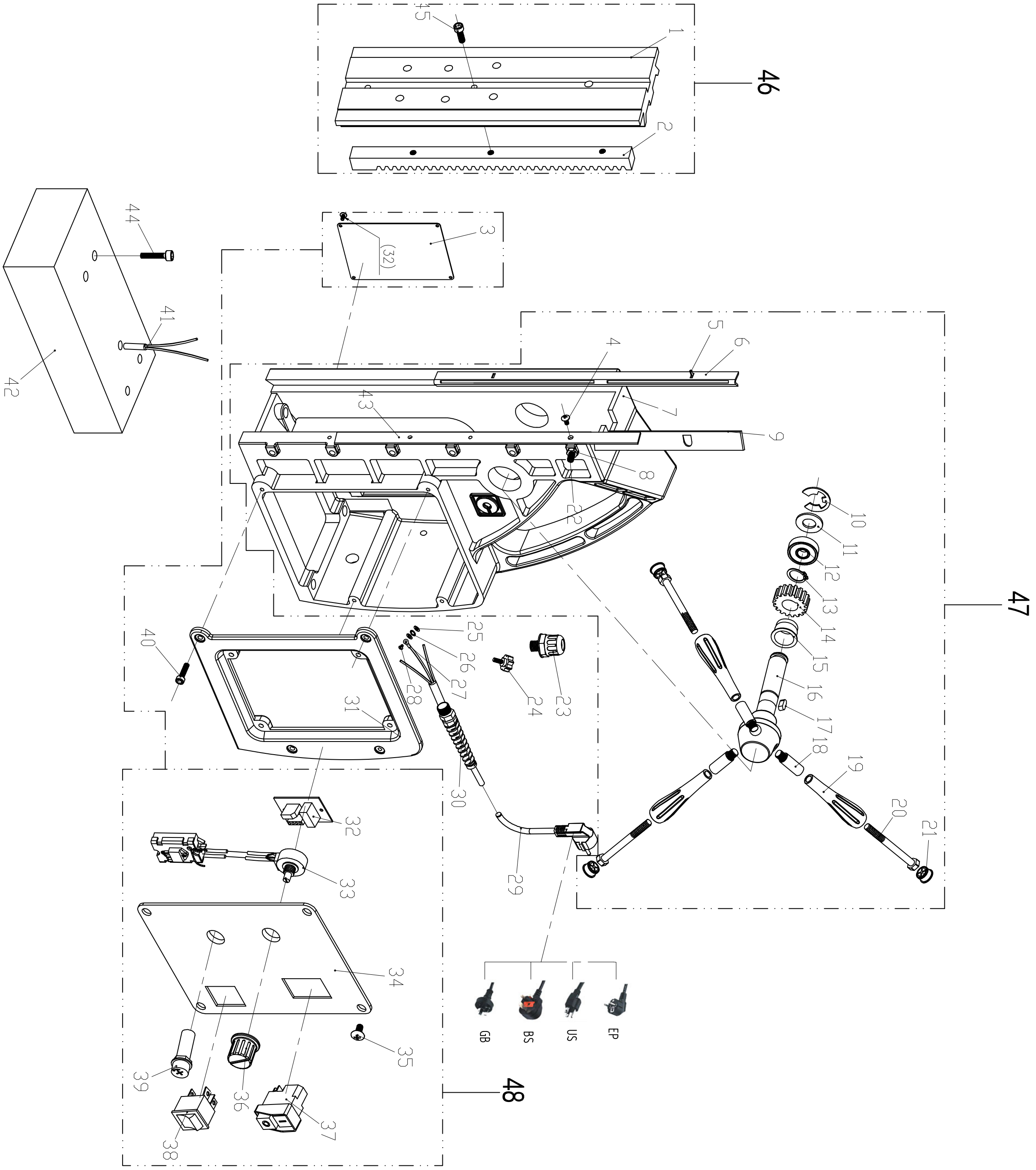
Pos.	Bezeichnung	Description	Größe Size	Art. Item no.
1	Sicherungsring, innen	Circlip, inner	19	042SR19W
2	Rostfreie Dichtung	Stainless gasket	9x19x2	
3	Polyurethanscheibe	PU washer		
4	Stift für Feder	Pin for spring	3	
5	Feder	Spring	3	
6	Schnellkupplung	Quick coupling	MK3	03071198106
7	Pressspannscheibe	Pressboard washer	35x3.5	
8	Kühlwasserring	Cooling water ring	28x54x19	03071198108
9	Mutter	Nut	M8	
10	Griff für Wasseranschluss	Handle for water connection	6x30x80	03071198110
11	Sicherungsring, außen	Circlip, outer	26	042SR26W
12	Spindel	Spindle	MK3	03071198112
13	Sicherungsring, innen	Circlip, inner	52	042SR52W
14	Lager	Bearing	60/28	
15	Getriebegehäuse	Gear box		03071198115
16	Gehäuseschraube	Casing screw	M5x55	
17	Stift	Pin	4x12	
18	Lager	Bearing	6005	0406005
19	Zahnrad	Gear		03071198119
20	Sicherungsring, außen	Circlip, outer	22	042SR22W
21	Getriebedeckel	Gear cover	19	03071198121
22	Stift	Pin	5x15	
23	Sechskantschraube	Hex. Socket Screw	M6x25	
24	Rotorritzel	Rotor pinion		03071198124
25	Passfeder	Key	12x5x4	
26	Rotorzahnrad	Rotor gear		03071198126
27	Lager	Bearing	LFB629	040629R
30	Rotor	Rotor		03071198130
31	Lager	Bearing	6200	0406200R
32	Luftleitring	Air conducting ring		03071198132
33	Blechschraube	Tapping screw	M5x70	
34	Stator	Stator		03071198134
35	Motorgehäuse	Motor Housing		03071198135
36	Typenschild	Nameplate		
37	Halter Kohlebürste	Brush bracket		03071198137
38	Sicherungsring	Circlip		
39	Kohlebürste	Carbon brush		03071198139
40	Schraube	Screw	M4x6	
41	Schraube	Screw	M4x12	
42	Gehäuseschraube	Casing screw	M4x35	
43	Gehäuseschraube	Casing screw	M4x40	
44	Motorabdeckung	Motor cover		03071198144
45	Mutter	Nut	M12	
46	Zugentlastung	Strain relief	M16x1,5	
47	Kabelschutz	Cable protection	M20	
48	Spindel komplett	Spindle complete		03071198148
49	Rotorzahnwelle komplett	Rotor toothed shaft complete		03071198149
50	Getriebe komplett	Gear complete		03071198150
51	Motor komplett	Motor complete		03071198151
K	Transportkoffer	Transport case		03071198K

28	Pressspannscheibe	Pressboard washer	31.5x1.8	
29	Lager	Bearing	6201	0406201R

8.10.2 Schaltplan - Wiring diagram



8.10.3 Magnetstand - Magnetic stand



8-16: Magnetstand - Magnetic stand - DM98V

Ersatzteilliste Magnetstand- Spare part list magnetic stand - DM98V

Pos.	Bezeichnung	Description	Größe	Art. nummer
			Size	Item no.
1	Schiebeschlitten	Sliding carriage	270x88	
2	Zahnstange	Toothed rack	14x14x250	
3	Rückwand	Back panel		
4	Kreuzschlitzschraube	Cross screw	M3x8	
5	Spannstift	Dowel Pin	3x8	
6	Führungsstreifen	Guide strip	1.5x310	
7	Ständer	Stand		
8	Mutter	Nut	M5	
9	Einstellbare Platte	Adjustable plate	3x12x310	
10	Sicherungssring	Circlip	15	042SR15W
11	Dichtung	Gasket	17x30x0.5	
12	Lager	Bearing	6903	0406903ZZ
13	Sicherungsring, außen	Circlip, outer	18	042SR18W
14	Vorschubzahnrad	Feed gear		03071198214
15	Kupferbuchse	Copper bush	58x26x30	03071198215
16	Vorschubwelle	Feed shaft		03071198216
17	Stift	Pin	5x14	
18	Griffhülse	Handle sleeve	10x16x50	03071198218
19	Plastikgriff	Plastic handle		03071198219
20	Schraube	Screw	M10x110	
21	Anschlag	Stopper		03071198221
22	Innensechskant-schraube	Socket head cap screws	M5x22	
23	Zugentlastung	Strain relief	M16x1,5	
24	Bakelit-Kugelschraube	Bakelite ball screw	M5x12	
25	Dichtung	Gasket	4	
26	Dichtung	Gasket	4	
27	Verbindung	Joint		
28	Schraube	Screw	M4x8	
29	Anschlusskabel	Connecting lead		
30	Knickschutz	Kink protection		
31	Einbaurahmen	Panel frame		
32	Leiterplatte	Circuit board		03071198232
33	Drehzahlregler	Speed controller		03071198233
34	Schaltertafel	Switch panel		
35	Rostfreie Schraube	Stainless screw	M3x6	
36	Drehzahlknopf	Speed knob		03071198236
37	Schalter	Switch		03071198237
38	Schalter	Switch		03071198238
39	Sicherung	Fuse		
40	Innensechskantschraube	Socket head cap screws	M4x10	
41	Näherungsschalter	Reed switch		03071198241
42	Magnet	Magnet		03071198242
43	Druckleiste	Pressure bar		03071198243
44	Sechskantschraube	Hex. Socket Screw M8x22	M8x22	
45	Sechskantschraube	Hex. Socket Screw M6x18	M6x8	
46	Gleitschlitten komplett	Sliding carriage complete		
47	Bohrständer mit Vorschubhebel komplett	Drill stand with feed lever complete		
48	Schaltertafel komplett	Switch panel complete		

EC Declaration of Conformity

according to Machinery Regulation 2023/1230 Annex V Part A

The manufacturer / distributor

Optimum Maschinen Germany GmbH
Dr.-Robert-Pfleger-Str. 26
D - 96103 Hallstadt

hereby declares that the following product

Product designation: Magnetic drill

Type designation:

OPTIdrill DM35
OPTIdrill DM35V
OPTIdrill DM35PF
OPTIdrill DM36VT
OPTIdrill DM38VF
OPTIdrill DM50
OPTIdrill DM50V
OPTIdrill DM50PM
OPTIdrill DM60V
OPTIdrill DM98V

fulfils all the relevant provisions of the Machinery Regulation specified above and the additionally applied directives (in the following) - including the changes which applied at the time of the declaration.

Description:

Magnetic drill

The following other EU Directives have been applied:

EMC Directive 2014/30/EU; Restriction of the use of certain hazardous substances in electrical and electronic equipment 2015/863/EU

The following harmonized standards were applied:

EN60204-1: 2019-06 Safety of machinery - Electrical equipment of machines - Part 1: General requirements

EN 62841-1:2023-03 Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery - Safety - Part 1: General requirements

EN IEC 61000-6-1:2019-11 Electromagnetic compatibility (EMC) - Part 6-1: Generic standards - Immunity standard for residential, commercial and light-industrial environments

EN IEC 61000-6-3:2022-06 Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments

Name and address of the person authorized to compile the technical file:

Kilian Stürmer, phone: +49 (0) 951 96555 - 800

Kilian Stürmer (CEO, General Manager)
Hallstadt, 2023-11-07